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THE CAVENDISH LECTURE ON THE ETIOLOGY AND DIAGNOSIS OF CEREBRO-SPINAL FEVER.[1]

BY WILLIAM OSLER, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore, Md.

In practice we occasionally meet with a meningitis which is not tuberculous, which is not a complication of pneumonia or ulcerative endocarditis, and which is not a sequence of ear disease or of injury, and which is not a terminal infection in some chronic malady. As the meninges of both brain and cord are diffusely inflamed, we label the conditions cerebro-spinal meningitis. At intervals, in certain regions, the cases multiply, and we then speak of epidemic cerebro-spinal fever. Until recently my experience, though somewhat varied, had been confined to a few instances in which the absence of the usual factors justified the diagnosis of the sporadic form of this disease. Within the past year a small outbreak in Baltimore has enabled me to study certain points in the etiology and diagnosis of this most interesting affection, and has thus determined my choice of a subject on which to address you.

I. SUMMARY OF THE FEATURES OF CEREBRO-SPINAL FEVER AS AN EPIDEMIC.

Upon these I shall only touch very briefly.

(*a*) One of the most fatal of all acute diseases, it fortunately takes a very humble position among epidemics as a destroyer. No fever attacks so few individuals in a community during its periods of prevalence; so that the general mortality may be but slightly increased. On the other hand, scarcely any known fever kills so large a proportion of those attacked. The recent epidemic in Boston illustrates this very well. Of 111 cases in three hospitals 76 died, a mortality of 68.5 per cent.

(*b*) The outbreak occurs in certain waves or periods, of which the fourth during the present century is at present prevailing in the United States. For several years there have been local epidemics of the disease in widely separated regions, usually in villages and country districts; but in 1896, 1897 and 1898 a slight epidemic occurred in Boston, and in the latter year cases began to be recognized in Baltimore and other towns. From a recent collective investigation, made under the direction of Surgeon-General Wyman, of the United States Marine-Hospital Service,[2] we learn that cerebro-spinal fever has prevailed during the past year (as a rule, in a mild form) in twenty-seven States, and in the District of Columbia. It is not possible to say that the movement of troops last summer had anything to do with the spread of the disease. The limitation for a year or more to one district or city without spreading to adjacent towns, the localization even (as at present in Washington and Philadelphia) to special districts of a city, the recrudescence for several seasons in succession, are well-known features illustrated by the present epidemic.

(*c*) Among specific diseases cerebro-spinal fever stands in some points close to pneumonia. Sporadic cases of both occur in intervals of epidemic prevalence, though in pneumonia they are much more numerous, while epidemics of pneumonia, like those of cerebro-spinal fever, are most striking in barracks, asylums and jails. Even when not prevailing as an epidemic, there may be remarkable house epidemics of cerebro-spinal fever. The seasonal relations are the same in both, and the two diseases may prevail together. The abrupt onset, the great frequency of herpes in both, the leucocytosis, "the almost identical characters of the fibrino-purulent exudate in the two diseases" (Netter), the frequent complication of pneumonia in epidemic cerebro-spinal fever and of meningitis in pneumonia are additional points of contact. The degree of contagion is about the same in both diseases, and, lastly, it has been claimed that the organism described in cerebro-spinal fever is only a variety or a degenerate form of the pneumococcus.

On the other hand, Leichtenstern, speaking against the view that the pneumococcus is the cause of epidemic cerebro-spinal fever, says: "Pneumonia is a disease spread over the entire earth, and appears at all times, there being no land immune from it. Epidemic meningitis is very rare, and in many countries is still unknown. Croupous pneumonia attacks every age, the disposition increasing somewhat with increasing age, epidemic meningitis is a disease which affects children and young people; beyond thirty-five there is slight disposition to it. Croupous pneumonia has a typical course and a crisis; epidemic meningitis has no crisis. The complications of the two diseases are different, etc." (Quoted by Councilman, Mallory and Wright.[3])

II. BACTERIOLOGY OF CEREBRO-SPINAL FEVER.

Until within the past few years the etiology of cerebro-spinal fever has been obscure, and a majority of observers regarded the organism found in the meningeal exudate as the pneumococcus, or a variety of it. More than twelve years ago, however, Weichselbaum described a diplococcus with special cultural peculiarities, which he regarded as the specific organism of the epidemic form of the disease. Little or no attention was paid to his communication until 1895, when his observations were confirmed by Jaeger. So little notice, indeed, had they attracted that neither Ormerod in "Allbutt's System" (vol. i, published in 1896), nor Latimer in "Loomis and Thompson's System," published in 1897, mention Weichselbaum's organism. The work of Heubner,[4] in Germany, and more particularly the studies of Councilman, Mallory and Wright, have fully confirmed the observations of Weichselbaum, whose organism, known variously as the meningococcus and the diplococcus intracellularis meningitidis, is now regarded as the specific cause of the disease. As the bacteriology of the subject is very fully discussed in the monograph by Councilman and his associates, and in the just issued article by Netter, in vol. xvi of the "Twentieth Century Practice," I shall confine my remarks to an account of our experience in the study of the cases which have been in my wards during the past year. To Dr. Norman B. Gwyn, who has charge of the bacteriological work in my clinical laboratory, and to Dr. N. McL. Harris, bacteriologist in the pathological department of my colleague, Professor Welch,

[1] Read before the West London Medico-Chirurgical Society, June 16, 1899. — From advance sheets courteously furnished by the editor of the West London Medical Journal.
[2] Public Health Reports, vol. xiv.
[3] Epidemic Cerebro-spinal Meningitis. A Report of the State Board of Health of Massachusetts. Boston, 1898.
[4] Jahrbuch für Kinderheilkunde, 1891, and the Deutsche medicinische Wochenschrift, 1897.

I am under special obligations for their careful study of the cases during life and after death.

The meningococcus in cover-slips made from the exudate has usually a diplococcus form, and lies within the polynuclear leucocytes; hence the definition, *intracellularis*. Many of the cells may be stuffed with them. They may also occur free. It stains with the ordinary staining reagents, and is decolorized by the Gram method. It grows best on Löffler's blood serum, on which it forms "round, whitish, shining, viscid-looking colonies with smooth, sharply-defined outlines, which attain a diameter of 1 to 1½ millimetres in twenty-four hours" (Councilman). In cultures it is usually short-lived; but Netter states that Germano has found that it resists desiccation, and has preserved its vitality to the end even of 90 days. He states also that Neisser has shown that the organism is transportable by atmospheric currents, even the most feeble, and that it is very susceptible to aërial convection. It is found in the cerebro-spinal exudate, rarely elsewhere in the body; but it has been isolated from the blood, the pus from the joints, the pneumonic areas in the lungs and the nasal mucus.

The organism is feebly pathogenic for animals. Rabbits and mice resist subcutaneous inoculation. Huebner, and Councilman and his associates have produced typical meningitis by inoculating cultures of the meningococcus beneath the spinal membranes of goats.

Our clinical and pathological experience with the organism is as follows: In 21 cases which I have seen, the lumbar puncture was made in 16. In three patients seen in consultation the diagnosis seemed so clear that lumbar puncture was not made. In Cases 1 and 2, both mild, the puncture was made, in one on the seventh day, in the other on the sixth; but no organisms were found. Cases 3 and 4 were admitted late in the disease, and it was not thought necessary to perform it. Of the remaining 14 cases, in 13 the diplococcus intracellularis was present on cover-slips and in cultures. In the remaining case its presence was doubtful on the cover-slips, and the staphylococcus grew in culture. Of the cases which came to autopsy, five in number, the bacteriologic results, as given by Dr. Harris, are as follow: Autopsy No. 1,104; meningitis, meningococcus; the pneumococcus from a pneumonic area in the lung. No. 1,189, a case with extensive arthritis, in which the diplococcus intracellularis was found in the blood and joint tissues during life, as well as from the meninges. Post mortem, the meningococcus was separated in pure cultures from the cord and brain, and from the lung the pneumococcus and the bacillus lactis aërogenes; from the blood in the coronary arteries the pneumococcus. The other organs were sterile. In Case 10 (Autopsy No. 1,247), on which laminectomy had been performed, the spinal meninges at the time of his death (about two months later) were perfectly normal. At the operation, the staphylococcus pyogenes grew from the culture. In No. 1,314, a case in which laminectomy was performed, the meningococcus was isolated from the meninges, both during life and after death. The bacillus coli communis, the bacillus lactis aërogenes, and the staphylococcus pyogenes albus were also isolated; from a broncho-pneumonic area in the lung the pneumococcus and the staphylococcus pyogenes aureus, from the spleen the staphylococcus pyogenes citreus, and from a thrombus in the superior longitudinal sinus and from the pelvis of the left kidney the streptococcus septicus liquefaciens (Sternberg). This case had a diphtheritic and hemorrhagic cystitis. No. 1,364, a very protracted case, in which death occurred in the twelfth week, and from which the meningococcus had been isolated from the spinal fluid twice, from the meninges post mortem the streptococcus pyogenes and the bacillus coli communis were isolated; and the staphylococcus pyogenes aureus and the bacillus coli communis from the broncho-pneumonic areas in the lungs. In a fatal case outside the hospital, the meningococcus, the pneumococcus and the bacillus coli communis grew in cultures from the cerebral meninges. There was no focus of pneumonia in the lungs.

The following memoranda by Dr. Harris are of interest:

Cultural methods employed. In the first cases we followed the method recommended by Councilman; namely, the use of blood-serum "slants." Such was found to be almost useless on account of contaminating organisms, for, out of a series of eight tubes, only one gave pure cultures.

In the other cases the exudates and fluids were plated out in alkaline five per-cent. glycerin-agar. This procedure gave entire satisfaction, in that the growth of the meningococcus was quite vigorous, and that associated organisms in the exudate (Cases 1,314 and 1,324A) were readily separated and classified.

Upon certain points our observations agree with those mentioned in Councilman's article.

(*a*) We have never seen, as Jaeger states, a capsule formation, nor in any case unassociated with other pyogenic organisms were we able to stain the specific organism by Gram's method.

(*b*) The cases coming to autopsy at the height of the disease furnished upon cover-slip and culture abundant evidence of the presence of the meningococcus, whereas cases which succumbed late in the disease yielded feeble results, or, as in Case 1,364, no evidence at all.

(*c*) The biological features of our several cultures gave practically the same results as Councilman obtained, except that in a few cases, after carrying the organism through several generations, litmus milk was found to be slightly bleached, but with no evidence of acid formation.

Regarding potato-culture, Councilman's statement of an invisible growth on this medium should be expanded by remarking that microscopic preparations invariably show evidences of moderate increase, and that the organisms are much larger than on ordinary media.

At no time has a blood-serum culture been observed to bear any striking resemblance to a growth of pneumococcus on a similar medium.

As in Councilman's experience, great variations in viability of the organisms were noted. But it is worthy of mention that when there is condensation water in the tube and growth present in it, the organisms as a rule will be found to be alive many days after life has ceased in the growth upon the surface of the medium.

Staining Reactions. — Supplementary to Councilman's remark upon focal staining points when using methylene-blue, it might be said that if old Löffler's methylene-blue solution is used, the coloration of that focal point is a decided violet-blue.

Animal Experiments. — Subcutaneous inoculation in rabbits and mice (white and gray house-mice) was resisted in every case.

In rabbits inoculated below the dura mater, or into e ventricles of the brain, death occurred in all within fourteen days to six weeks, and in no instance were we able to find evidences of gross pathologic lesions, nor the presence of the meningococcus on cover-slip or culture. The animals were all greatly emaciated.

Mice inoculated into pleural or peritoneal cavities died in from three to four days, in most cases with general septicemia.

Special Remarks. — Regarding Jaeger's observation of the occurrence of chains of cocci in exudate or spinal fluid, it may be said that it has not been observed, but on blood-serum growths it was quite common to find chain-formation with the unstained light line of cell-division running parallel to long axis of chain. However, this feature is not by any means uncommon amongst the pyogenic staphylococci.

Attempts to isolate the specific organism from any other site than the spinal fluid, and the meninges of spinal cord and brain, have in every case been attended with failure. This is especially noteworthy in Case 1,189, which presented arthritis. A large quantity of the sero purulent fluid was inoculated, incubated for three days, and the plates were found sterile, and yet cover-slips of the fluid showed considerable numbers of intracellular diplococci. The heart's blood of this case failed to give positive results at autopsy, although during life the organism had been isolated from the blood as well as from the joint lesion.

Pneumonic or broncho-pneumonic foci have always given the pneumococcus, either alone or with the pyogenic staphylococci.

One Case, No. 1,314, brings out a possible source of error in the use of Gram's stain upon the cover-slip preparations of the exudate in cases where a secondary infection may be present. The cover-slips from the meningeal exudate in this case were examined by Gram's method before cultures were ready, and cocci were found which did not decolorize, thus causing some surprise, but it was cleared of doubt by finding the staphylococcus pyogenes albus in association with the meningococcus upon the agar-plate.

Case 1,325 A is most interesting in that from the exudate on the cerebral meninges the meningococcus, the pneumococcus and the bacillus coli communis were isolated, and positively identified. A mouse was inoculated intrapleurally with 3 cubic centimetres of a twenty-four-hour-old blood-serum condensation-water growth, and succumbed upon the third day with a general infection.

Another mouse received 5 cubic centimetres of a strong suspension in Durham's medium of a twenty-four-hour-old agar-agar culture of the pneumococcus, but showed no evidence of illness. The milk culture of this organism when stained by Welch's capsule stain exhibited well-defined capsules and stained by Gram's method.

Microbic Association in Cerebro-spinal Fever. — Councilman, Mallory and Wright state that "Mixed infections with other organisms were not uncommon. The pneumococcus was found seven times, once in connection with Friedländer's bacillus. Terminal infections with staphylococci and streptococci were occasionally found."

Netter refers to this point in the following terms: "In a very small number of cases observers have reported finding at the same time with the pneumococcus or the diplococcus the staphylococcus pyogenes, the streptococcus, the colon bacillus, the bacillus proteus, and the capsulated bacillus. These microbic associations are always secondary, however, and we must refrain from regarding any but the two agents above described as the primary causes of cerebro-spinal meningitis."[1]

In the report on the bacteriology of the post-mortems by Dr. Harris, the frequency and number of microbic associations will have been noticed. Three points are of interest in this connection: In chronic cases, as 10 and 17 of our series, the diplococcus intracellularis may no longer be present; we have obtained it, however, for the first time on the 25th, 31st, and 41st days of the disease. Of the two cases referred to, No. 17 presented a most typical picture of the disease, and the diplococcus intracellularis was obtained in the spinal fluid on the 31st and 35th days. At the autopsy the meninges showed a moderate amount of exudate, and there was fluid (purulent) in the posterior horns of the ventricles. The diplococcus intracellularis was not found, but the streptococcus pyogenes and the bacillus coli communis were isolated from the meninges.

Case 10 is of particular interest, and I give here a brief summary of the history.

A sailor, John F., aged twenty-five, was admitted October 29, 1898. The illness had begun on October 26th, with swelling and pains in the right ankle, and the next day the left ankle became swollen, and then the right hip. He was able, however, to walk to the hospital. On admission there were also redness and tenderness of the left wrist. For the first week we were very doubtful as to the nature of his trouble. The temperature was between 102° and 104°, and we rather suspected typhoid fever. On the 31st he complained of pain in the back and hips, and on November 1st it was noticed that his head was in a very retracted position. On November 4th he had retention of urine. On the 6th it was noticed that he could not move his legs. Lumbar puncture was then performed, and two drachms of a thick creamy pus removed which showed cells and numbers of diplococci, some in cells, but a majority free and in groups. Dr. Cushing performed laminectomy, and drained away a large amount of purulent exudate, and irrigated the spinal meninges with normal salt solution. Cultures made from the fluid obtained by the lumbar puncture and at the operation grew the staphylococcus pyogenes aureus. From the history and symptoms the case was doubtless one of cerebro-spinal fever, subsequently affected with the staphylococcus.

More frequently the pneumococcus has been found in association with the diplococcus intracellularis. In our series it was present only once (Case 13) in the fluid obtained by lumbar puncture. On the 5th day 20 cubic centimetres of a faintly cloudy fluid were removed, and both organisms grew in culture. On the 7th day the pneumococcus was isolated from the blood. Netter found the pneumococcus associated with the diplococcus intracellularis (post mortem, I take it, though it is not so stated) in 10 of 16 cases of cerebro-spinal meningitis.

The third point is the occasional association of the tubercle bacillus with the diplococcus intracellularis, but so rarely that it is not a point of much practical importance.

On the whole, then, our observations support those of Weichselbaum, Jaeger, Heubner, Councilman and others, that in epidemic cerebro-spinal fever there is an organism with special cultural peculiarities which may reasonably be regarded as the exciting cause of the disease. Netter alone, among recent observers, seems to doubt this, and says that he only found the diplococcus intracellularis in 16 out of 39 cases, and in 10 of these the pneumococcus was present at the same time. His most recent statement in the "Twentieth Century Practice" (1899) is worth quoting: "Certain observers, and more particularly Jaeger and Heubner, believe that the diplococcus intracellularis is the sole pathogenic agent in epidemic cerebro-spinal meningitis, and that the pneumococcus has no influence whatever in the production of true epidemic meningitis. Councilman is a little less emphatic, although he appears disposed to adopt this way of thinking. I do not, however, in any way accept this view. The pneumococcus can, without any doubt, cause meningitis, and in spite of Heubner's experience, the rôle of the pneumococcus has been most surely established experimentally. The frequent occurrence of

[1] Twentieth Century Practice, vol. xvi, p. 123.

pneumonia complicating meningitis and of meningitis complicating pneumonia, and the coincidence with meningitis of many other inflammations which may be excited by the action of the pneumococcus, imply that between pneumonia and meningitis there exists a relation which cannot be denied." He seems to think that the diplococcus intracellularis may be a degenerate form of the pneumococcus, and in support of this view cites: "Its intracellular position is evidence of a phagocytosis going on, the impossibility of cultivating most of the individuals, as shown by the small number of colonies obtained, its decolorization by Gram's method, and its usual innocuousness in animals. I would not, however, insist upon this opinion, nor lay too much stress upon the arguments just mentioned, for the question is only hypothetical as yet."

It does not seem to be altogether clear, from certain of Netter's observations, that he has been dealing with the meningococcus. Thus, in his communication,[6] the coccus which he found in the eight cases was rounded, usually in pairs, sometimes in short chains; at other times capsules were seen. They stained by Gram's method, and in bouillon long chains developed, and mice resisted infection when inoculated subcutaneously. He concludes, from these observations, that the meningococcus is nothing more than a degenerate pneumococcus. Dr. Harris, in a note on this, remarks: "Such conclusions are entirely unwarranted, or if his observations are correctly stated, he evidently had the veritable pneumococcus to deal with, and, by some strange mode of reasoning, concludes that he has the meningococcus in his series of cases, and that it is identical with the pneumococcus, though of a degenerate form!"

Netter's position is most illogical and confusing. Throughout the article in the "Twentieth Century Practice" — in many ways one of the very best in literature — he assumes that the specific disease, cerebro-spinal fever, may be caused either by the pnemococcus or the diplococcus intracellularis. That a primary cerebro-spinal meningitis may be due to the pnemococcus is universally acknowledged; but it is in the highest degree unlikely that a remarkable specific affection, like cerebro-spinal fever, should be caused by two different organisms. Towards the close of the article the inconsistency of this view seems to impress him, for he says certain peculiarities "prevent us from concluding that the two diseases (that is, pneumonia and cerebro-spinal fever) are absolutely identical."

III. DIAGNOSIS OF CEREBRO-SPINAL FEVER.

Meningitis is not always easy to recognize clinically. Mortifying post-mortem disclosures are even more common with it than with pericarditis. The unexpected meningitis of pneumonia, of Bright's disease, and of other chronic affections, teaches us how latent may be the process; on the other hand, who has not in typhoid fever and in pneumonia made a positive diagnosis of meningitis, and has found post-mortem the cerebro-spinal membranes perfectly free. Sooner or later the truth of Stokes's dictum is brought home to each one of us: "There is no single nervous symptom which may not, and does not, occur independently of any appreciable lesion of the brain, nerves or spinal cord." The anatomical classification of leptomeningitis is not very satisfactory, and, as I have stated, there is a great lack of uniformity in the terms employed. The nomenclature of the Royal College of Physicians recognizes four groups — purulent, tubercular, syphilitic, and cerebro-spinal fever. An etiological classification, possible to-day in part, is of necessity incomplete. In the annexed diagram I have made a provisional grouping of the chief forms:

Acute Leptomeningitis.	Primary.	1. Of cerebro-spinal fever.	(a) Sporadic. (b) Epidemic.	Diplococcus intracellularis.
		2. Pneumococcic.	Meninges alone involved or in a general pneumococcus infection.	Pneumococcus.
	Secondary.	1. Tuberculous.		Bacillus tuberculosis.
		2. Pneumococcic.	(a) Secondary to pneumonia, endocarditis, etc. (b) Secondary to disease or injury of cranium or its fossa.	Pneumococcus.
		3. Pyogenic.	(a) Following local disease of cranium or a local infection elsewhere. (b) Terminal infection in various chronic maladies.	Various forms of staphylococci and streptococci.
		4. Miscellaneous acute infections.	In typhoid fever, influenza, diphtheria, gonorrhea, anthrax, actinomycosis and other acute diseases.	Typhoid bacillus, influenza bacillus, diphtheria bacillus, gonococcus, etc.

The acute primary leptomeningitis in a large proportion of all cases follows an infection with the diplococcus intracellularis or the pneumococcus. It will be a great gain if Still's observations (to which I shall refer later) on the posterior meningitis are confirmed. I do not know where Quincke's meningitis serosa should come in an etiological grouping. Of three cases diagnosed as such in our records, in one a micrococcus was isolated, but nothing further is stated as to its identification. It is highly improbable that, as Netter holds, cerebro-spinal fever either in the sporadic or epidemic forms is caused by the pneumococcus. The body of evidence accumulated within the past few years in Germany and America is strongly in favor of the specific relationship of a definite, easily-recognized organism, the diplococcus intracellularis. The pneumococcus may produce a primary meningitis, and pneumonia at certain seasons and in certain regions may frequently be associated with this lesion, but both clinically and bacteriologically this form can be distinguished from the disease under consideration.

While the possibility of the occurrence must be admitted, I have not recognized a primary meningitis caused by the pyogenic organisms[7] or by the tubercle bacillus. The terminal meningitides I have placed among the secondary forms; and, as in the terminal pleurisies and peritonitides, a variety of organisms are found. Even in cerebro-spinal fever the streptococci and staphylococci, always on the watch for a *locus minoris resistentiæ*, may drive out the original foe, as in Cases 10 and 17.

To the secondary forms of meningitis in the table I shall not refer, except to call attention to the importance of the pneumococcus in this group also; nor can I discuss within the limits of this lecture the clinical features of the varieties of meningitis, and must confine my re-

[6] Bull. et mem. Soc. Méd. des Hôp. de Paris, xv, p. 407, 1898.

[7] The case of John Brooks (autopsy No. 1,805) is of interest in this connection. He had an illness of eight weeks' duration, with obscure cerebral symptoms. On admission he had an urethral discharge. At autopsy there was found an extensive cerebral meningitis, with distention of the ventricles and slight meningitis of the dorsal cord. From the exudate and from the urethral discharge streptococci and staphylococci were isolated. The slight urethral secretion might readily have been overlooked, and the case regarded as a primary pyogenic meningitis.

marks to a few special points in the diagnosis of cerebro-spinal fever, and to a consideration of certain sporadic forms of meningitis.

(I) *Certain Features in the Symptomatology of Cerebro-spinal Fever.* — No other form of meningitis presents a symptomatology of the same fulness — general, cerebral, spinal, and peripheral features are present in almost every case. This results in part from the extent of the cerebro-spinal involvement, in part from the very frequent implication of the nerves, and to some degree is a consequence of the very chronic course. I shall discuss only a few of the important symptoms.

(*a*) *Onset.* — In striking contrast to other forms, particularly the tuberculous, cerebro-spinal fever sets in abruptly. Without warning, while at work, or awakening the patient from a sound sleep, comes the pain in the head, etc. This peculiarity may also be met with in primary pneumococcic meningitis; but in the form secondary to pneumonia, and in that which arises in endocarditis, latency of onset in the rule.

(*b*) *Fever.* — There is no constant type of fever in any form of meningitis. In cerebro-spinal fever the pyrexia is very variable, and I have given here a few charts in illustration.[1] There may be no fever at onset. Of our epidemic cases, all had fever on admission.

Irregularity in the fever may be present from the start. There is not a steady rise at first to a fastigium, but even on the third or fourth day the temperature may fall to normal. Chart I shows this extreme irregularity in a two-hour record. The remissions were very pronounced, and the temperature rose to 108° just before death.

In other cases the course is singularly like that of typhoid fever, and for days the two-hour temperature chart may not show a variation of more than a degree. This is well illustrated in Chart II from Case 17. This patient (as shown on the lantern slide) had the facial aspect of a case of typhoid fever. Chart III from Case 13 shows also a very steady fever with but slight remissions to the time of death on the fifteenth day. Chart IV from Case 15 presents a still more marked resemblance to a typhoid-fever curve, particularly in the daily remissions, giving the spiked chart with which we are all so familiar in the third week of the disease. Intermissions, exacerbations, and great irregularities similar to those in tuberculosis are very pronounced in the more chronic cases. Chart V from Case 16 gives the maximum and minimum daily temperature from the twenty-ninth to the seventy-ninth day. It will be noticed how variable is the time of the highest point of daily fever. On thirteen days the maximum temperature was in the morning — an inverse type, to which many writers have referred, in this disease. The exacerbations are better shown in a two-hour record. In Chart VI from Case 15 the intermittent type is shown, but the paroxysms are distinguished from those of tertian malarial intermittent fever by their prolonged course.

In cases of this sort, when chills occur, the picture is very suggestive of malaria, and one can understand why some of the older writers regarded the disease as a manifestation of paludism. The chart of Case 8 is worth a passing comment. After a very steady temperature on the 9th, 10th, and 11th days, the record on the 12th day was normal. On the 13th day there was a paroxysm without a chill, lasting from 10 P. M. on June 19th to 4 A. M. on the 21st. On the 14th and 15th days the temperature was normal. On the evening of the latter the fever rose, and the paroxysm lasted through the 16th day, and at 4 P. M. the patient complained of decided chilliness. On the 17th day no fever. At 10 A. M. on the 18th day the patient had a rigor, in which the temperature rose to 104.5°; the paroxysm lasted more than thirty hours. Then on the 20th, 21st and 22d days he had recurring attacks, two with chills; the one on the 22d, without chill, extended into the 23d day. After this the patient's temperature remained normal, and he recovered rapidly. During these attacks he complained of a great deal of pain in the head and back. The spleen was not enlarged. The blood was examined daily for the malarial parasites, but none were found. And lastly, Chart VII from Case 15 illustrates the relation of the lumbar puncture to the temperatures. After the sixth, seventh and eighth puncture the fever dropped; after the twelfth it rose.

(*c*) *Skin Rashes.* — Various skin rashes are common in cerebro-spinal fever, and form an important feature in the diagnosis. Of 21 cases which I saw during the epidemic, in 13 a skin eruption of some form or other was present. Herpes, of course the most common, was present in 8 cases. A diffuse erythema about the chest and abdomen, and over the joints, was present in 4 cases. Petechiæ were noticed in 8 cases, extensive in only 3. In 3 cases a very remarkable and peculiar rash was present in the neighborhood of the joints, particularly over the extensor surfaces of the knees and elbows, and about the ankles. There was a diffuse, livid erythema of great intensity, on which pupuric herpes developed — a vesicular rash, the individual vesicles of which became filled with blood. As the erythema faded and the vesicles dried, they could be felt as little nodular hemispherical bodies, which persisted for a week or ten days.

(*d*) *Blood.* — A careful study of the blood was made in all of our cases. A leucocytosis was present in every instance. In four the first blood count was made on the third day, and the leucocytosis was 25,900, 14,500, 40,800, and 32,000 per cm. The first blood count was made on the fourth day in four cases, and the leucocytosis was 26,240, 31,800, 19,300, and 7,600 per cm. In only four cases did the leucocytes exceed 40,000 per cm., and the maximum count was on the ninth day in a fatal case, 47,000 per cm. The leucocytosis persists even in the most protracted cases. In a lad who died in the twelfth week of the disease the leucocytes were 23,000 per cm. shortly before death. As a rule there was no special reduction in the red blood corpuscles. In one case a moderate anemia developed, and in the fifth week the red corpuscles were only 3,100,000 per cm. In one case the diplococcus intracellularis was isolated from the blood during life.

Leucocytosis has no special value in the differential diagnosis of the various forms of meningitis. I had an impression that it was not so constant in the tuberculous variety, but Dr. Parfitt analyzed the records in 11 of our cases and found that in only 3 was a leucocytosis absent. The lowest count was 65,000 per cm. Of 8 cases with leucocytosis there were 4 with 20,000 or more white corpuscles per cm. The highest count was in a child aged eight — 24,333 per cm. Altogether the leucocytosis seems not to be so high or so persistent in the tuberculous meningitis.

(*e*) *Arthritis*, or more often periarthritis, much

[1] The charts were not received in time to print.

more common in cerebro-spinal fever than in other forms, was present in two of our cases. In Case 7 the joint lesion came on with great rapidity, and by the fourth day he had a multiple suppurative arthritis, resembling an acute pyæmia. The diplococcus intracellularis was isolated from the pus in the joints. In the other (Case 10) the disease began with arthritis.[9]

II. *Kernig's Sign.* — Described by a Russian physician, and studied in Germany and France, this interesting sign has not attracted the special attention of English and American physicians, though J. B. Herrick, of Chicago, at the last meeting of the Association of American Physicians, spoke of its value. It has been present in all of our cases in which it has been looked for. It is, I think, an old observation that the subjects of protracted meningitis, particularly children, very often lie with the thighs flexed upon the abdomen, and with the legs in a state of partial contracture, so that they are with difficulty extended. To test for Kernig's sign the patient should be propped up in bed in the sitting position, then, on attempting to extend the leg on the thigh there is contraction of flexors which prevents the full straightening of the leg. On the other hand, in the recumbent posture the leg can be fully extended. Many patients with meningitis are not in a condition to sit up, and the test can be equally well made by flexing the thigh on the abdomen, when on attempting to extend the leg, if meningitis be present, the limb cannot be fully extended. Friis found the sign in 53 or 60 cases, and Netter in 45 or 50. It is stated to be present in all forms of meningitis when the spinal meninges are involved. The presence of the sign is no indication of the intensity of the spinal involvement, as it existed in a very marked degree in a recent case of pneumococcic meningitis, in which there was no positive exudate on the spinal meninges, only a turbid fluid. Netter's explanation of the phenomenon is as follows: "In consequence of the inflammation of the meninges the roots of the nerves become irritable, and the flexion of the thighs upon the pelvis, when the patient is in the sitting posture, elongates and consequently stretches the lumbar and sacral roots, and thus increases their irritability. The attempt to extend the knee is insufficient to provoke a reflex contraction of the flexors while the patient lies on his back with the thighs extended upon the pelvis, but it does so when he assumes a sitting posture."

(*To be continued.*)

Clinical Department.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

REGULAR meeting Wednesday, March 8, 1899, DR. J. W. ELLIOT in the chair.

DR. F. A. HIGGINS showed a case of

IMPERFORATE RECTUM.

Robert N., age four days, was brought to the Children's Hospital, November 24, 1891. His general condition was very good, but there was considerable abdominal distention and tenderness. The anus admitted tip of little finger to a depth of nearly an inch and a half, but no fluctuation above could be felt. Dr. Burrell operated immediately after seeing the case. An incision was made backward in the median line from the outer margin of the sphincter ani, extending up on the dorsum of the sacrum. The coccyx and the left half of the sacrum up to the second sacral foramen were excised with bone-forceps. An opening of considerable size was thus obtained with the rectum lying exposed directly in front. The rectal and anal portions of the bowel were seen to be continuous, and the obstruction found to be due to a membranous diaphragm stretched across about two inches above the anus. The anus was dilated, the diaphragm punctured from below, the opening stretched, and the wound sutured. The stricture was dilated with a glove-stretcher every three or four days while the child remained in the hospital. The recovery was uneventful, and the child was discharged from the hospital on the eighteenth day. Now at the age of seven he is apparently perfectly well, and has had perfect control of the sphincter since infancy. This case is, so far as I am able to find out, the first case of imperforate rectum for which the coccyx and sacrum have been excised in operating for its relief.

DR. FARRAR COBB presented a

CASE OF IMPERFORATE ANUS.

It is my wish to very briefly report the following case, because it demonstrated the value of the posterior operation and the long incision, close to the left-hand border of the sacrum and coccyx (the so-called para-sacral incision), when I had failed to find the rectal pouch by the usual median perineal section. Congenital ano-rectal imperforation and its treatment has been reviewed by Matas, of New Orleans, in 1897, and I can only refer to his paper for a complete study of the subject.

A male infant of Italian parents was brought to the Carney Hospital thirty-six hours after birth. It had passed no meconium, and was said to have cried almost constantly and to have regurgitated all liquids given. I saw the child forty-eight hours after birth and operated without delay. It was a large, well-developed boy. The abdomen was moderately distended and tense. The anus was normal in appearance, but the rectal opening consisted of a shallow depression in the skin — no fluctuation or mass could be felt through this depression. The urine passed normally and was free from meconium.

The infant was placed in the lithotomy position with heaters around it; ether, a few drops at a time, well mixed with air, was used to obtain partial anesthesia. A careful and rather prolonged dissection was made in the median line of the perineum, the incision extending from the root of the scrotum to the tip of the coccyx through the anal tissues, and being carried as deep as I dared to go, but no rectal pouch could be seen or felt. From the normal formation of the anus, I had been led to hope that the case might be a simple one, and the rectal ampulla be found just beyond the external skin, but the external appearance was no guide to the situation of the rectum, and the use of a trocar or exploring needle would have done no good and some mischief. Rather than resort to opening the abdomen it was decided to try and find the rectum by the posterior route, being prepared to do resection

[9] A full report of these cases is given in the Boston Medical and Surgical Journal, December 29, 1898.

of the coccyx and, if needed, partial resection of the sacrum. The previous incision was then prolonged along the left border of the coccyx and sacrum to a point nearly or quite as high as the sacrosciatic notch, the infant being held in an exaggerated lithotomy position. By this incision I was surprised to find how the pelvis became accessible. The coccyx bent back readily, and by using strong lateral retractors very good access to the pelvis for the eye and fingers was obtained. The rectal pouch was found high up surrounded by peritoneum. It was not necessary to cut away the coccyx or any part of the sacrum, although this could have readily been done. At the time of the operation I did not know that this long para-sacral incision had been used and advocated by Vincent for this class of cases.

The peritoneum was opened, the rectal pouch was pulled down to the anus and stitched to its margins with fine silk sutures and opened, the peritoneal cavity being walled off above the gauze. Gauze was left in the wound to protect the peritoneal cavity and to check some obstinate, deep, venous oozing. The external wound was sutured, provisional stitches being left where the gauze strands led out beside the rectum, at the anal border.

The child remained in the hospital about ten days and did very well. It was fed on cream mixture and had free and apparently normal movements. The gauze was removed in forty-eight hours and the provisional sutures tied. The external wound united well and without suppuration. The parents insisted on taking the child home against my wishes, and when it left the hospital it was apparently well. On looking up the case some months after, I learned that it had died of "fits" soon after leaving the hospital. I do not think the operation was a cause of this death, for apparently it was successful, and the child's nutrition was good when it was taken home — but, at any rate, the case cannot be shown you to-night.

In conclusion, I want to note a few practical points in the surgery of this class of cases.

The situation of the rectum cannot be determined by the external appearances (unless in those cases in which meconium is discharged through bladder or vagina). A trocar or exploring needle should never be used.

Primary abdominal section should never be resorted to except in those rare cases of delayed operation in which the child's condition is extremely precarious and immediate opening of the bowel is needed.

As a routine method preliminary dissection in the median line of the perineum should be done, using care to cut backward in the median line and not laterally. If this does not reveal the pouch the attack should be by the posterior route, either with or without resection of the coccyx and part of the sacrum. In many cases resection will not be necessary. In almost all cases the posterior route with resection of the cartilaginous bones will be sufficient. Abdominal section is seldom needed, and only as the last resort. The peritoneum can be safely opened from below.

Dr. Conant: If I am not mistaken I saw this case soon after Dr. Cobb operated on it, and can say that when the baby left the hospital its general condition was as good as one could expect in any child of that age irrespective of the operation, and I saw no reason, from what I knew of the case, why it should not go on and perform its functions in the ordinary way. It certainly was a very successful operation as far as the operation itself went.

After seeing the boy we have seen here to-night, and hearing Dr. Cobb's paper, it may seem presumptuous for any one to state that he believes in any other operation than this. I have seen, I think, five cases in all of this trouble, two at the Massachusetts General Hospital, and it was rather an interesting thing that the first abdominal operation I ever did after I was appointed an out-patient surgeon at the Massachusetts General Hospital was done in the house on a case of this sort. I did not then attempt to remove the coccyx or sacrum, and I don't know but what if I had that operation might have been a success. I tried the posterior operation without the removal of the coccyx and sacrum, and as nothing could be seen or felt it seemed wise to open the abdominal cavity and find out where the rectum was, whether wanting entirely or located in some abnormal position. On opening the abdomen there was found to be practically an absence of the rectum, and there was a point about on a level with the promontory of the sacrum which flared off and covered practically the whole brim of the true pelvis. Any attempt at puncture in that region from below without knowing where you were going would have brought you into the peritoneal cavity at once. Having found exactly where the gut was bulging, a trocar was passed into the incision previously made, and in such a way that practically you went into the gut without opening the peritoneal cavity in front or behind. That operation was done the latter part of May or June, and the child lived until the middle of August, and died of cholera infantum. I was impressed by the fact that the opening of the abdominal cavity made but very little difference in the child. There was not a rise of temperature or pulse to amount to anything. The wound healed by first intention; apparently no shock from opening the peritoneal cavity. The bowels were kept open by inserting a glove-stretcher or the finger. I was very much impressed with the ease with which it was possible to locate the exact position of the rectum, or what was left of the rectum, that is, the very uppermost portion of it, and the ability to demonstrate exactly where you wanted to pass your trocar.

I have been interested in collecting 100 cases reported by Cripp and perhaps they will add some light to the subject. His first series of cases were where the operation was for opening the colon in the groin. There were 16 of those cases, with 11 deaths, and yet if you take up most of the text-books on rectal diseases you find colotomy is one of the operations especially urged if the so-called posterior operation is not successful. He had 3 cases of colotomy in the loin, with 2 deaths. Out of 17 cases of puncture 14 died, which you would naturally expect. Unless you know where you are puncturing you probably go into the peritoneal cavity in front or behind. There were 8 cases of removal of the coccyx and resection of a part of the sacrum and 5 deaths. There was an incision in 39 cases and 14 deaths. He had a series of 14 cases where he made a communication between the rectum and vagina; 1 death. Another series of miscellaneous cases, 3 cases and 3 deaths; out of 100 cases 50 deaths. If you analyse those cases somewhat carefully you find the most deaths are in the class of cases in which you would expect to get death, that is, indiscriminate puncture in the operation of colotomy.

I say this because it seems to me a colotomy in a small child is a much more serious operation than simply opening the abdominal cavity, locating the exact position and tapping from below, knowing exactly where you are going. One interesting thing is his series of 8 cases with 5 deaths.

I suppose there is no question that in the smaller number of cases which may be called the more severe ones, there must necessarily be this division of opinion as to whether this anterior operation is more desirable than the posterior one where you take out the coccyx and sacrum. It seems to me there can always be an honest difference of opinion as to the wisdom of the two methods. If the rectum is as high up as in my case it seems to me it would have been almost impossible to have reached the rectum by any operation posteriorly, unless you take out practically all the sacrum. So that it seems to me there can reasonably be a certain class of cases in which this posterior and brilliant operation cannot be a success because you cannot get up to your sac. I believe this posterior operation has a place for itself and should be the first operation to try. If you can reach the gut in this way you can expect to get better results in the long run than where you have to do an abdominal operation, and then have to do what is known as the combined method, because it is extremely difficult in those combined methods to keep the trouble in the pelvis and in the peritoneal cavity entirely distinct, so that the risk of possible infection is very much greater.

DR. WHITNEY explained briefly the mode of development of the rectum, and how from a malformation the condition of imperforate anus could arise. Specimens from the Warren Museum illustrating this were shown.

DR. ARTHUR T. CABOT said that he should fully agree with Dr. Cobb as to the advantage of the posterior (Kraske) incision in providing access to the pelvic cavity. While not having used this incision himself in a case of imperforate rectum, he had employed it many times in cases of cancer of the rectum, and felt that it would afford a most satisfactory approach to the lower end of the bowel in any case where the bowel descended into the pelvis, and would only fail when the pervious portion of the gut ceased above the pelvic brim.

He mentioned a case reported by him years ago, in which the bowel opened into the deep urethra. The patient had already lived many months with his fecal evacuations all passing *per urethram*. An incision made through the dimple in the skin which marked the seat of the sphincter ani, reached the bowel at a depth of about one and a half inches. The rectal wall was drawn down and sutured to the skin in the middle of the sphincter. The result was absolutely satisfactory, and the patient was seen some years later with good retentive power and a sphincter which acted in all respects normally.

In some cases the rectal sac lies too high in the pelvis to be found and properly treated by an incision from below, and in such cases an abdominal incision, as urged by Dr. Conant, is the easiest, safest and, consequently, the best method of learning the existing anatomical conditions. In some cases it may be possible with the knowledge thus gained to so direct an incision from below that it will enter the rectal pouch safely. When this cannot be accomplished, the bowel can be opened and stitched in the abdominal incision.

DR. MIXTER: Dr. Conant referred to a case he saw the other day upon which I operated, and did what one does not wish to do except under exceptional circumstances—I made an inguinal colotomy. The circumstances were such that I think it was the only possible thing to do. The child was three or four days old, a puny little thing, and the abdomen was so distended that the outside of it looked like a big abscess ready to burst. The skin was glassy and red, and the baby was absolutely blue; in fact, Dr. Whitney suggested it was a blue baby. The pressure had almost entirely shut off what little respiration the child had. It was impossible to give it ether, and I was sure I could feel the pouching rectum not far from the skin; so I made a median incision and not finding it, I did what I should not do except in exceptional circumstances — put in the trocar. Nothing came through the trocar, although I am sure it went into the rectum. Then I made a small incision through the abdominal wall, found an enormously distended gut and caught it by a stitch to the abdominal wall. Round on the inside of the abdominal wall, between that and the gut, was packed gauze, an opening made, and an enormous quantity of very sticky tenacious meconium came out. The child did perfectly well, the gauze was removed, feces came through this opening in the side for something like two weeks. At the end of two weeks the child had done well, was growing and eating well, and digesting its food well, and then a block-tin tube passed through the opening in the side could be passed down to the scar in the region of the anus, and a very slight dissection showed the rectal pouch, which was brought down and opened. The child has done well since then, that is, about a week ago. In that case the rectum was closed to the anus.

I have seen two cases interesting in this connection, being of the same origin as these two cases of anus aberrans Dr. Whitney has shown. One of these I operated upon with success. There was an opening from the vagina or vulva back to the middle of the mass of sphincter which could be easily found, and I did an operation like that for ruptured perineum closing the opening in the vagina. That was done two or three years ago, and the child has had perfect control of the bowels since.

I agree with Dr. Cabot that in most cases the preferable operation would be this lateral operation if it can be done. In certain cases, as in the one I spoke of, it would be impossible to prolong the dissection to that extent. The bowel can be opened from above in less than two minutes without the slightest trouble.

A CASE OF IMPERFORATE RECTUM.

DR. C. A. PORTER reported this case: In June, 1894, I saw, with Dr. Francis Murphy, of Roxbury, a well-nourished boy, two days old. He had not passed meconium. A shallow dimple marked the site of the anus, the levatores and sphincter were normal, Without ether an incision was made exactly in the median line from the penoscrotal angle to the coccyx; the latter was pushed back but not excised, after a long search; dissecting with the forefinger to the promontory of the sacrum, a bulging ampulla was felt, tapped and opened, with free discharge of meconium: The edges of the enteron were brought down and sutured to the skin, and a gauze plug introduced; the whole operation required one and one-quarter hours.

Dilatation with bougies was carried on for two months

with satisfactory results, the bowels moving well; then the mother did not come for several weeks, and finally turned up with the baby in a sad plight. The end of the bougie had broken off and the rough end had been pushed into the bladder through the deep urethra. Most of the urine passed through the contracted rectal scar; much of the feces through the penis. The abdomen was tense and distended; the child very ill, vomiting everything.

Again a long median incision was made under ether; the rectum was reached, and a large rubber drainage-tube inserted into the sigmoid. The baby did well; feces ceased to pass through the penis, but a varying amount of urine passed *per anum*. This condition persisted for eight months, when the mother said urine ceased to escape from the anus; bougies were continued, and again the mother and child were lost sight of.

When the boy was nineteen months old the mother brought him in again; belly distended, scar contracted so that only a knitting needle could be passed up the bowel; feces *per urethram*; urine by rectum once more. A similar operation was performed with rapid improvement.

Examination by Dr. Brewster at the age of two years showed no escape of urine; the little finger could be passed with ease into the sigmoid flexure.

On September 21st, when twenty-seven months old, the boy died of diphtheria in the City Hospital.

Dr. A. Thorndike: One point in connection with the operation I think has not been emphasized, namely, that when you are dealing with a total occlusion of the rectum in these new-born babes you have practically the same condition as in a strangulated hernia, a total obstruction that brooks no delay, but must be operated on at once. I learned this to my sorrow in one case. A child twenty-four hours old came to the Infants' Hospital at nine o'clock at night. I expected to operate, but when I found that the anus admitted the finger about one inch and a half, that the light was poor and the child's condition good, I decided to wait for daylight. In the morning the child was all right; so I pierced a thin occluding membrane a little over an inch within the anus and dilated the opening. There was a copious evacuation of meconium, she took her food well all day and had two movements and was in good shape in the evening, but she died in the night suddenly. No autopsy was permitted. I believe that the longer an imperforate rectum is allowed to remain unoperated the worse it is, provided occlusion is complete. One should, however, be careful to discriminate between complete atresia of the rectum and the condition Dr. Mixter referred to as aberrant anus. They should not be classed together at all, and yet one hears of successful cases of operation for imperforate rectum or anus where a fecal discharge had existed for weeks by the vagina or urethra. We are learning by degrees to appreciate the difference in prognosis between the aberrant anus and the imperforate rectum.

Dr. C. A. Porter: I looked over the cases operated on at the Massachusetts General Hospital in the last fifteen years, and found 15 cases, of which 11 died before they left the hospital. Dr. Conant's case lived two and a half months, another sixty-one, and another twenty-three days, and the rest died within twenty-four hours. In only two cases were autopsies done, one, a case of imperforate rectum, which died from septic peritonitis definitely attributable to three punctures in the rectum through the peritoneal cavity, where the gut was finally found and sewed to the anus.

I should agree with Dr. Cobb that in the majority of cases the median incision behind would reach the gut, but if after fifteen minutes' search the gut cannot be found, one of two operations should be done: the intentional opening of the peritoneal cavity through the posterior incision, or an immediate incision of the left inguinal fossa, which I think gives the child a better chance than a long search through the posterior incision. In one case my father operated on no amount of search in the posterior incision could have found the gut, for there was occlusion of the small intestine in the middle of the ileum, where the gut was adherent to the umbilicus; below that point the whole intestine was much atrophied, though pervious, the rectal ampulla communicating with the anus by a tortuous channel barely admitting a biliform bougie.

Dr. Whitney: If I remember rightly, the bladder is developed from the allantois, which does not come in contact with the rectum, so that in the majority of these cases the opening would be into the vagina or urethra, and the communication of the rectum with the bladder must be extremely rare.

Dr. Elliot: I think the operation done by Dr. Cobb is the proper operation in most cases of imperforate anus. I have, however, had one case of absence of the rectum which was much like Dr. Conant's case. In such cases what is found is that the bowel ends in a great, flaring, blind sac, which fills the top of the pelvis and balloons up and fills the whole abdomen. In such a case — absence of the rectum — where the bowel is glued to the top of the pelvis, a dissection over the coccyx, even with the removal of part of the sacrum, does not reach the bowel. What I found in my case, and what Dr. Conant found, is that you cannot safely open the bowel from below. You feel a large bulging mass above; if you open into it from below you may open the peritoneum or you may open the bladder. The distance is too great for a safe dissection, therefore I think in such cases laparotomy is necessary. Dr. Matas has collected all the cases, and he finds there have been six such cases done where the two routes have been used in combination, and all these cases have recovered. At the time of his paper, however, there were only two cases alive. They died from other causes than the operation. My own case and one other were alive at that time. I think, then, that the reason for opening the abdomen in these cases where the rectum itself is nearly absent, and where the bowel is very high up, is that you may injure the bladder or may open the peritoneal cavity in the wrong place. My case was reported at the American Surgical Association in 1896, and I now have a sequel, which is not uninteresting. The child was two days old, and operated on in May, 1896, at the Massachusetts General Hospital. The coccyx and part of the sacrum were removed, but the bowel could not be reached from below. A laparotomy was done and the abdomen was found filled with the lower bowel distended. That was pushed down until it could be opened through the opening below. When it was opened it collapsed and could be pulled down, and was sewed into the opening by the side of the sacrum, as in a Kraske operation. The child recovered and did very well, but the scar of the artificial anus contracted and was dilated, under ether, in December, 1896. The child was born with a perfect anus, be-

hind which was a blind pouch about one-fourth inch deep, which at the time of the operation I did not molest, as I made my incision entirely above it. In March, 1897, this artificial anus had again contracted so that I had to dilate it; after dilating it I dissected out the bowel from the Kraske wound and found that from the obstruction it had bulged down behind the artificial anus and had worked much lower than at the time of the operation. I therefore pulled it down and sewed it on to the natural anus and that healed, so I had the original relations entirely restored, and the child had moderate control of feces and comfort for the rest of its life. The child died in January, 1899, of nephritis, more than two and a half years after the operation, having grown fat, and having developed fairly well.

DR. WRIGHT: One of the cases to which Dr. Porter has referred came under my observation. The small intestine about midway in its course showed defective development, there being two blind pouches in close apposition to one another, and more or less adherent to the abdominal wall in the neighborhood of the umbilicus. The explanation is not clear. I should be very much obliged if some one would explain, on embryological grounds, how this condition could arise.

DR. WHITNEY: That question is very interesting. There are several specimens in the museum where the small intestine has failed to develop midway in its course. From the adhesions in the neighborhood of the umbilicus mentioned by Dr. Wright it is possible that it is in some way connected with an omphalo-mesenteric condition, and in this case, instead of pulling out the gut, it has pulled it apart.

A CASE OF ACTINOMYCOSIS; OPERATION; RECOVERY.

DR. MIXTER showed a cured case of actinomycosis. This man had in the side of his neck a mass which we thought was an ordinary tubercular abscess, and on removing this thoroughly it was examined by Dr. Wright. I dissected out everything under the jaw, and here is simply the scar, such as you would see in the neck following any chronic abscess. In other words, this is a case of lump-jaw cured. I think it is interesting as showing that this thing can be cured. It was operated in September.

DR. CABOT: How far beyond the visible edge of the disease does the infection actually extend?

DR. WRIGHT: In these cases I have seen and from what I know of the disease I should say it is not an infection which is like anthrax or some of the other infections, in which the extent of the disease is beyond our naked observation. I think one can tell with the naked eye very well how far the infection has spread.

THE PATHOLOGY OF ACTINOMYCOSIS.

DR. J. H. WRIGHT gave a brief account of some points in the pathology of actinomycosis. He considered that the disease is probably more common in man than is generally supposed, and that it often goes unrecognized. He referred to several cases that had come under his observation at the Massachusetts General Hospital during the past two or three years. In two of these the disease was superficial and localized, so as to be readily and radically removed. The methods of diagnosis by means of the microscopical examination of the characteristic granules found in the lesions were explained.

DR. WHITNEY: We had known the disease in cattle, but I think this was the first instance in this immediate locality in which the disease was detected in man. As Dr. Wright has said, it is very often associated with foreign bodies. In this case a fish-bone had apparently perforated through the intestine and was present in the abscess. In cattle it is supposed that portions of wheat or rye are driven into the gum and alveolar process, and this seems to be the favorite locality for its commencement. I think Ponfick first described the lesion in man, and in his cases there were extensive prevertebral abscesses. I have one or two photographs of cases in man of the disease of the face. The general resemblance of the appearances to leprosy or tuberculosis is evident.

DR. MIXTER: I have had two cases, one of which I have shown to-night and the other Dr. Whitney has alluded to. I opened what I supposed was an ordinary abscess, and presently Dr. Whitney said it was a case of actinomycosis. The case was that of a man of sixty with a small mass just above the umbilicus. This I opened and found this peculiar looking pus, and Dr. Whitney found it to be actinomycotic. I excised the whole mass, taking out the umbilicus and portions of the rectus muscle down to the peritoneum and found that the whole thing was adherent to the intestine and had to be separated. I tied off the omentum and cut it away from the intestines so that I left only a little of the mucous membrane and did intestinal suture. Dr. Whitney hardened the mass. The interesting part is that in this mass were these two fish-bones which you see projecting. These had perforated through from the bowel. At the time of the operation I said before I began: "Gentlemen, this looks like a skewer abscess in a dog." Dogs are likely to get skewer abscesses from swallowing wooden skewers. The dog swallows these sharp wooden skewers in pieces of meat and becomes sick, if he does not die. Sometimes on the surface of the abdomen or elsewhere will appear a lump which will break, and out of it comes the skewer and the dog gets well. This thing was suggested to me. It was a perforation by a fish-bone. In this case the actinomycosis probably was not present in the fish-bones when they were eaten, but I suppose some of the actinomycotic tissue was taken into the stomach, and, finding this wound in the intestine, produced this thing. This mass was removed in 1894 or 1895. I had a letter from the man this last week. He said he was perfectly well except the hernia at the site of the operation; it was impossible to draw the wound together. But he is alive and well after four or five years and with this comparatively deep-seated process.

The man you just saw is a patient I saw with Dr. Swan, of Stoughton, and the abscess had been opened and had kept on discharging. It was supposed to be an ordinary tubercular abscess. I took him into my service at the Massachusetts General Hospital, and whether or not at the time of the operation we had the pus examined I have forgotten; at any rate Dr. Wright found these masses. It was a well-marked case and perhaps answers the question Dr. Cabot asked as to how far this disease extends, whether farther than you can see it. I curetted the thing fairly well and began to dissect out the base, and in the outlying tissue I took out where it looked inflamed Dr. Wright found absolutely nothing: it was only in the more softened parts. The thing healed up by granulation and there has not been any sign of recurrence.

Dr. J. W. Elliot reported several

CASES OF ACTINOMYCOSIS.

I have had several cases of actinomycosis in my hospital service. I have had one case like Dr. Mixter's fish-bone case. I opened an abdominal abscess which was filled with a peculiar material, finally a second operation was done and a fine-tooth comb came out in a mass of fibrous tissue. The thing looked different from anything I had seen before; I knew it was not an ordinary abscess, and I have little doubt that it was actinomycosis. I have had three other cases which were proved by the microscope to be actinomycosis, which shows that the disease is not very rare. The first case is the case Dr. Mallory discovered at the autopsy. That case I operated on for necrosis of the rib and I noticed a cavity in the chest full of what I supposed to be tuberculous material. It was packed with iodoform gauze and I never got to the bottom of it. The man finally died at the City Hospital, and Dr. Mallory discovered at the autopsy that it was actinomycosis. Another case Dr. Wright has already referred to — actinomycosis of the liver. I was called to the medical ward to see a man with a very high evening temperature with morning remissions, with evidently trouble in the liver. The liver was enlarged and felt very hard; I thought it might be cancer, but I had never seen cancer of the liver make such violent constitutional disturbance. Dr. Scudder, taking my service, made an exploratory incision, found nothing to attack and closed the incision. Later abscess of the liver developed, pointed and was opened. Dr. Wright made the diagnosis of actinomycosis from what came out, and the patient died practically of abscess of the liver.

The last case is a most interesting one clinically, and in every other way, as the man is now alive. Two years ago when I came on duty I found a man who had been in Dr. Homans's service, but Dr. Homans had not operated on him. He had one of those troublesome sinuses near the anterior superior spinous process of ilium, going down into the abdomen, which all surgeons dread to see because suggesting disease of the sacro-iliac synchondrosis, and that is what I supposed it was. I laid this sinus open and found that it led to an enormous cavity of actinomycosis, which I proceeded to clean out, regardless of its extent. I found everything was mushy near the opening, and I was led on from bad to worse, laying this sinus open deeper and deeper and finding this mushy tissue all over the right side of the abdomen, until before I had finished the operation I had removed the whole abdominal wall on the median line as far up as the umbilicus and out beyond the anterior superior spine down to Poupart's ligament, and up nearly as high as the rib on the side; the whole side of the abdomen was taken away and there must have been nearly a quart of mushy tissue scraped out. The disease was found between the intestines and had made an opening into the small intestine. While we were at work Dr. Wright reported it was actinomycosis, so we went on with more vigor and determination. It had extended all round the iliac artery, which seemed to be the only tissue in the region to resist its progress. We scraped the psoas muscle, took out the appendix and scraped the cecum and finally packed with gauze. The man recovered with fecal fistula, and about six months afterward I found that the disease was not returning deep down, but was returning back in the loin, so we etherized and scraped away another large mass of this disease. This time the scraping started where I left off in the loin and went back into the side. It had invaded the fatty tissues especially. By that time I had learned how the disease looked and could easily distinguish the diseased tissue from the sound. There were almost characteristic little holes of broken-down tissue which at first looked like tuberculosis. We stopped the disease in that direction by deep scraping. He recovered from that, and passed into the hands of Dr. C. B. Porter, and Dr. C. A. Porter has followed up the case and will tell us how he is now. The disease has already lasted about three years and I understand that he is now travelling in Europe.

Dr. C. A. Porter: I have not seen him for nine months. When I last saw him he was out, fairly well nourished, able to eat very well, his bowels moved well, though discharge from the fecal fistula continued. A little while before that visit my father found that the discharge from the granulation tissue still contained actinomyces. He went abroad, not wishing any further operation done.

I will speak of one other case that came to my notice as the result of Dr. Wright's lectures on this organism. I had been searching almost all summer among the alveolar abscesses in the out-patient department for actinomycosis; finally I found one which presented the appearances of an ordinary alveolar abscess which did not open on the outside. On opening the abscess and examining the pus the characteristic appearance was found. I excised the tumor afterwards and there has been no return. The man had broken his jaw six months before, and in all probability the organism entered through the fracture of the jaw and this small tumor developed six months afterwards. The process was quite circumscribed, the walls unusually dense and hard, on section no organisms were found in the granulation tissue, though several small clumps, the size of a pin-head, in the pus were unmistakable.

Dr. Wright presented several photographs of actinomyces showing the branching and general character of the filaments.

Dr. Monks: I have two specimens to show. The first one is a loop of intestine, part of which has been strangulated for eighteen hours. There was nothing remarkable about the case or the operation, except that the bowel was of a dark cherry-red color when strangulated, but, on relieving the constriction, the normal color at once returned. The Halsted method was used for radical cure. Before the man came out of his ether fully he tore off his bandage. Another one had to be put on. The next morning at nine o'clock he suddenly died. An autopsy was held by Dr. Mallory, who examined very carefully all the organs. The only abnormal condition found was edema of the lungs, and this, in the opinion of Dr. Mallory, was the cause of death. Everything about the field of operation was apparently normal. The lung edema may have had some connection with the anesthesia, but this is not certain.

The second specimen was removed by autopsy from a man upon whom I had done an intestinal anastomosis two years and a half previously.

The receipts of the bazaar in aid of the Charing Cross Hospital, London, last week were £13,300.

Medical Progress.

REPORT ON THE DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WENTWORTH, M. D.

VALUE OF THE SIGN OF KERNIG IN THE DIAGNOSIS OF MENINGITIS.

NETTER[1] calls attention to this phenomenon, which was first observed in 1882 by Kernig, of St. Petersburg, and which was subsequently confirmed by Henoch, Ball, Blümm and Friis. It is elicited in the following way: The patient is placed in dorsal decubitus, care being taken that the legs are relaxed and fully extended at the knees. When the child is raised to the sitting posture it is found that the knees are more or less flexed, and, despite all efforts, cannot be completely extended on account of contracture of the posterior muscles of the thighs. In some cases the angle made by the thigh and the leg is a right angle, and in no case has it been found to be greater than 135° or 140°. Complete extension becomes possible when the patient is put upon the back again. According to Netter's observations in 46 cases of meningitis of whatever nature, this sign was wanting in but five cases, or about 10 per cent. It has not been observed in other conditions, having been found absent in numerous cases of typhoid fever, pneumonia, acute articular rheumatism, chorea, cerebral affections in infants, erythema nodosum and similar diseases. Netter believes that the presence of this sign confirms the diagnosis of meningitis when the symptoms are obscure, and suggests a latent meningitis when it is the only symptom present. Two cases are quoted. One was a clear case of typhoid fever, but Kernig's sign was present. The patient died of a perforation, and the autopsy revealed the presence of a meningitis due to the staphyloccocus aureus, together with the intestinal lesions of typhoid fever.

A second patient presented Kernig's sign, with slight symptoms of meningitis. Lumbar puncture was made but withdrew no fluid. After a remission of ten days fever reappeared, and a fluctuating mass was discovered over the sacrum. This was incised and the pus was found to contain the meningococcus. The infection had spread from the spinal canal, following the track made by the needle. The presence of meningitis was thereby established. All varieties of meningitis are said to produce this sign, including tubercular meningitis, secondary forms, and cerebro-spinal meningitis.

THE SYMPTOM OF BOLOGNINI IN MEASLES.

A. Koeppen[2] refers to a symptom described some years ago by Bolognini, as existing in measles. This consisted in a peculiar sensation of friction, felt when gently rubbing the tips of the fingers over the surface of the abdomen with gradually increasing force. This phenomenon, which, according to Bolognini, could be felt from the prodromal period well on to the end of the disease, was considered to be due to a morbillous eruption upon the peritoneum, and he considered that it offered a diagnostic sign of measles.

Recently, Koeppen had opportunity to control the observations in the course of an epidemic of measles, during which he specially examined 316 children, several of them on more than one occasion. The symptom of Bolognini was observed in only 154 of these patients. Moreover, the author has been able to convince himself that the phenomenon consists not in a sensation of friction (*frottement*) but rather in a fine crepitation, which recalls that given by subcutaneous emphysema, and seems to be due to the presence of bubbles of gas in the intestines. Indeed, most of the children in whom Koeppen found this symptom were suffering from diarrhea, with foamy stools.

Finally, the author has observed this symptom, though to a less marked degree than in measles, in children suffering from digestive troubles and who were free from measles. In healthy subjects he has never observed the phenomenon.

It follows from these later observations that the symptom observed by Bolognini, although frequently present in measles, cannot be considered as a pathognomonic sign of the disease.

THE SPECIFIC ORGANISM OF VACCINIA.

A. F. Stanley Kent[3] publishes the result of further studies upon the organism discovered by him in the tissues of the vaccine vesicle in 1894. This organism was described as a bacillus, exceedingly minute, measuring a bare micron in length; it appeared to occur, as a rule, in pairs, joined so as to form dumb-bells, not true diplococci. The individual bacilli were very slightly greater in length than in breadth. The bacilli occurred not on the surface, or, as far as could be ascertained, among a variety of organisms which were present in the superficial portion of the vesicle, but were deeply seated in large numbers and in practically pure culture in their special habitat beneath the line of incision.

The author's later studies have been devoted to elaborating a method of preparing pure cultures of this organism; investigating its staining properties; and conducting inoculation experiments with the cultures. He has succeeded in proving that in the organism described as the diplobacillus vaccinia is found a virus which occurs in the vesicles (and tissues surrounding them) of ordinary vaccinia; that this organism has special morphological characteristics and staining reactions. Pure cultures of this organism inoculated into susceptible animals give rise to vesicles which are described as being indistinguishable from the vesicles produced by vaccine lymph. Animals thus injected do not react when vaccinated with active vaccine lymph. Sections through the vesicles thus produced are found to contain the organism in large numbers. These organisms exhibit the same morphological character, staining reactions and distributions in the tissues, as the organisms originally found in the vesicles of typical vaccinia.

THE VALUE OF METALLIC PERCUSSION COMBINED WITH AUSCULTATION IN THE DIAGNOSIS OF PLEURAL EFFUSION IN CHILDREN.

Moussons[4] calls attention to metallic percussion with auscultation (the coin test) in the diagnosis of pleural effusions in children, and considers it a most valuable means in distinguishing between the dulness due to pleural effusion and that depending upon pulmonary consolidation.

[1] Société Medicale des Hôpitaux, July 22, 1898; American Journal of Medical Sciences, February, 1899.
[2] Centralbl. f. innere Medicin, 1898, No. 26, S. 673; American Journal of Medical Sciences, February, 1899.
[3] Lancet, December 17, 1898, p. 1,616; American Journal of Medical Sciences, March, 1899.
[4] Revue Mensuelle des Maladies de l' Enfance, January, 1899; American Journal of Medical Sciences, April, 1899.

The value of the coin test in adult patients in conditions other than pneumothorax has already been investigated by Pitres, and later by his pupil Sieur. Their observations have shown that when the lung is healthy the sound transmitted to the ausculting ear is obscured, smothered, without metallic timbre. In the presence of an effusion in a pleural cavity free from adhesions, the transmitted sound has a clear, sharp, metallic ring.

Congestion of the lung and inflammatory or neoplastic consolidations fail to give the coin test in its purity. The same is true of foci of broncho-pneumonia or of tuberculosis, infarcts, encysted pleurisies and effusions into the pericardial cavity. Not only may the presence of fluid be recognized but the upper limit of the effusion can be detected in pleuro-pneumonia and in pleuritic effusions. The author has devoted several years to the study of this test as applied to young infants, with the hope of proving its value in a class of cases which offers greater difficulties in diagnosis than do similar conditions in the adult. The results have demonstrated to his satisfaction that this test constitutes a very valuable addition to the ordinary methods of diagnosis. He finds that in the young child, as in the adult, the metallic click is muffled and loses its ringing timbre in traversing the healthy lung. The percussion should be made more gently than in the adult, and the non-ausculting ear should be stopped. The same quality in the transmitted sound is to be observed with broncho-pneumonia and croupous pneumonia. In these cases auscultation is made at the point where the vesicular murmur is suppressed or replaced by râles (whether dulness be present or not), the percussion being practised at a point on the hemithorax diametrically opposite. Not only is the sound impure and without metallic ring, but the sound of the stroke itself is enfeebled, and is notably more muffled than on the healthy side; sometimes it disappears altogether. In the presence of pleural effusions the coin test was very clear in four out of seven cases, and in the three remaining cases was clearer than on the healthy side, but lacked the silvery quality.

In six cadavers of young infants, varying in age from a few days to one year, with one of a child of six or seven years, artificial pleural effusions were produced with varying quantities of fluid, and the coin test compared with the results obtained before injection. In no case was the metallic timbre observed before the fluid was injected, while in only two instances after injection did the sign fail. In one of these the sound was clearer, but its metallic quality was not distinct. In both of these cases the test was successful after injecting larger quantities of fluid (above 200 grammes). (When one considers the frequent confusing results offered by physical examination of the chest in young children, even when fluid is present in considerable amount, the value of an additional physical sign, though not absolutely pathognomonic, cannot be too highly estimated. It is to be hoped that more extensive clinical experience will confirm the promises of Monssons's observations.)

THE ANEMIAS OF EARLY INFANCY.

R. Fischl[1] does not believe that it is possible to diagnosticate the nature of the anemias of early infancy by means of the microscopic examination of the blood. His reasons are briefly as follow:

[1] Jahrbuch f. Kinderheilk, vol. xlix, p. 36, 1899; Revue Mensuelle des Maladies de l'Enfance, Mars, 1899, tome xvii.

During the early period of infancy the leucocytes present such polymorphous characters that were they found later in life they would have a pathological significance. No such significance can be attached to them in early infancy.

With regard to the erythrocytes, the great variation in size must be regarded as physiological in the early weeks of life.

Erythroblasts, which exist normally in the blood of the fetus, diminish progressively in number toward the end of fetal life, but small numbers of them are always present in the blood for a short time after birth. The appearance of large numbers of them in the blood of infants indicates abnormalities in the hemapoietic system. In general, the gravity of the anemia bears some relation to the number of erythroblasts in these cases, but this does not permit conclusions to be drawn relative to the nature of the disturbance.

There is no characteristic hematologic picture at this age by means of which one can differentiate anemias. All that can be determined by microscopic examination of the blood is the existence and the severity of the anemia.

It is not possible to conclude from the examination of the blood that this or that part of the hemapoietic system is abnormal, because the organs which take part in the formation of the blood during fetal life can continue to perform their functions to some extent for several months after birth.

On the other hand, the organs which in later life take part in the production of the blood have not reached their complete development in early infancy, and this helps to complicate any deductions which may be made from the appearance of the blood at this time.

The same uncertainty holds good in regard to the number and size of the erythroblasts and their nuclear division; to the appearance of poikilocytosis; and to the polychromatophilic character of the leucocytes. These appearances simply warrant deductions as to the degree of anemia present.

At the present time much of the diagnostic value which was formerly attached to the histological examination of the blood is lost, and it is necessary to search in some other direction for explanations of the blood changes.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SECTION ON THE PRACTICE OF MEDICINE, COLUMBUS, OHIO, JUNE 6, 7 AND 8, 1899.

FIRST DAY.

In a short address the Chairman, Dr. Frank Billings, of Chicago, called attention to the advantages of preliminary epitomes and was inclined to advise that a compulsory abstract be in the hands of the Secretary by the first week in May.

The first paper read was by Dr. N. S. Davis, of Chicago, and was entitled

WHAT ARE THE PHYSIOLOGICAL PROCESSES OR FUNCTIONS THAT IMPART TO THE LIVING HUMAN BODY ITS VITAL RESISTANCE OR IMMUNITY TO THE ACTION OF THE TOXIC AGENTS TO WHICH IT MAY BE EXPOSED; AND HOW CAN THAT BE AIDED IN THE TREATMENT OF DISEASE?

In discussing the subject Dr. Davis touched briefly upon physiologic processes by which the living body maintains its vitality and metabolism in health, how these natural processes are affected by the chief causes of disease, both chronic and acute, and the chief means by which the physician may effectually aid the natural processes in restoring health after disease or disorder has been produced. He strongly advocated the reinforcement of the *vis medicatrix naturæ*.

A COMPARISON OF THE VARIOUS METHODS OF ESTIMATING HEMOGLOBIN

was the title of a paper read by DR. B. M. LINNELL, of Chicago, Ill. The author considered the various color tests, and basing his observations on a number of cases, pointed out the errors of both the Fleischl and Gower instruments. He also spoke of the variations between the different eyes and between the same eyes at different times and under different circumstances. He strongly advocated the approximate estimation by known dilution of the examined blood and considered by far the most accurate Hammerschlag's, or the specific gravity method, in his experience. The normal specific gravity, according to his method, was 1.0605 in healthy adult life. He believed that the variations in hemoglobin were not sufficient to interfere with the specific gravity tests, and also showed a convenient case for applying this method.

In discussion, DR. JUDSON DALAND, of Philadelphia, remarked that there is a certain amount of error in the Fleischel instrument, possible by its delimiting the field of observation and comparison by a perforated cap over the cylinder. He considered the Gower instrument subject to very wide ranges of error and advocated a series of comparative tests by the three different methods.

DR. GEORGE DOCK, of Ann Arbor, Mich., corroborates the testimony as to the efficiency of the Hammerschlag method and condemned the Gower instrument. He described an instrument already on the market similar to that suggested by Dr. Deland, for limiting the field of vision, and recommended an improved pipet, in which definite quantities could be employed. This instrument, however, was very expensive and no better than the specific gravity apparatus.

DR. H. D. ARNOLD, of Boston, directed attention to the importance of the specific gravity method in cases of chlorosis, in which the blood has a very low specific gravity.

DR. LAMBERT OTT, of Philadelphia, then read a paper on

THE SPREAD OF DISEASES IN SCHOOLS, AND ITS PREVENTION.

He contended that most children's diseases are obtained in the intercourse of school life, by kissing, the common use of drinking-cups, the habit of putting pencils in the mouth, etc. The diseases usually spread in school are diphtheria, scarlet fever, whooping cough, measles, varicella and variola or varioloid. To prevent the spread of disease in schools he urged that children convalescent from contagious disease should not be allowed to return to their studies until a certain lapse of time. For diphtheria he fixed four weeks from the inception of the disease, with an additional week in outdoor life, and quite as long a period for scarlet fever. For measles at least two weeks should elapse from the inception of disease, and one week in outdoor life, before the child should be permitted to return to school. Children convalescing from small-pox should not be allowed to return before the expiration of two months from the onset of the disease, and should spend also at least one week in outdoor life. So long as there is a vestige of the symptoms, children convalescing from whooping-cough should be kept away from school. Teachers should be taught to recognize the contagious diseases and by what means they are spread, and children should be instructed in simple rules in hygiene. In all cities there should be a medical superintendent of public schools, and a trained corps of assistants to trace sources of contagion, etc. The author also spoke of the laws of Pennsylvania relating to small-pox and vaccination.

In discussion, DR. ARNOLD, of Boston, described a very successful method of medical examination of the schools in that city by district physicians. He also thought that the period of absence from school prescribed by Dr. Ott was certainly not too short.

DR. J. H. MUSSER, of Philadelphia, considered the subject of such importance that he moved that a committee of three, with Dr. Ott as chairman, be appointed to bring it before the general session, which motion was unanimously carried.

DR. REYBURN, of Washington, believed that a partial remedy for the conditions considered might lie in forbidding children from being sent to school before the age of seven. No child during the period of its most rapid development should go to school for more than one session of three hours a day.

DR. BRAGDON, of Minneapolis, and DR. AXTELL, of Denver, also participated in the discussion.

DR. T. N. MILLER, of Rockford, Ill., in a consideration of

CEREBRO-SPINAL MENINGITIS,

presented the bacteriology and clinical types, the diagnosis and prognosis of this affection, and believed that it was not contagious. He considered symptomatic treatment useless, and hoped for the discovery of antitoxin. He advocated ergot and calabar in the early stages, with perhaps bromides in children. He strongly advised against bleeding, even though it were apparently indicated. Opiates are of great use in all stages of the disease, and the continued use of iodides is advised. Counter-irritation is of value, but he had never used cold application. The best hygienic surroundings should be provided for the patient. The author presented a clinical report of two cases of markedly intermittent type. The infection was evidently through the nasal chambers, and was accompanied by mucopurulent discharge, in which were found large numbers of the diplococcus of intracellularis meningitidis. He gave extensive descriptions of the post-mortem lesions.

DR. C. M. MILLS, of Illinois, spoke of the rheumatic nature of the disease.

DR. J. C. WILSON, of Philadelphia, dwelt upon three points: (1) The importance of Kernig's sign; (2) the isolation of the patient, even though there is evidence to believe that the disease is not transmissible, if it is proven of micro-organismal origin. Certainly any other means of procedure is fraught with danger; it is far better to be on the safe side; (3) the overwhelming importance of opiates in large doses often repeated.

In the discussion DR. DIDAMA, of Syracuse, N. Y.,

gave a history of the successful use of opium many years ago by the advice of Dr. Da Costa.

DR. MUSSER, of Philadelphia, called attention to the value of lumbar puncture as a diagnostic feature and therapeutic measure. It is unattended with danger, is of the utmost importance for early diagnosis, and often gives great relief. He regarded laminectomy as a rational procedure in cases in which there was profound sepsis, or in which there is great pressure. He considered opium the only drug of value.

DR. H. Y. FLETCHER, of Baltimore, had had an opportunity of studying a number of cases in Dr. Osler's clinic and confirmed Dr. Musser's view, but added that although there was evidently relief from the distressing symptoms and temporary prolongation of life, in no case in which lumbar puncture was used did recovery ensue. He called attention to the development of severe arthritis as one of the earliest symptoms, and placed on record the discovery of the causative organism in the joints and in the blood.

DR. SCOTT, of Iowa, spoke on the infectious nature of the disease.

DR. MATHEWS, of Missouri, had never seen evidence of contagiousness in an extensive practice. He believed that in its treatment sodium salicylate should be combined with opium, on account of the analogy of the disease to rheumatism.

DR. BRADWELL, of St. Louis, Mo., had made bacteriologic examination in a number of cases, and with a single exception found the diplococcus intracellularis. In one case he found the micrococcus lanceolatus and he believed this case to be of sporadic nature. He emphasized the importance of Kernig's sign. He found Gram's method of differential staining to be very unreliable.

DR. RABBOLD, of St. Louis, Mo., confirmed the statements of the previous speaker, and spoke of two cases in which there was reason to believe the disease was transmitted. The mortality in St. Louis the last year was 81 per cent. He called attention to the fact that Kernig's sign appears early, and that difficult deglutition was a fatal sign.

DR. ANDERS, of Philadelphia, cited one instance showing the non-contagious nature of the disease. However, he believed in isolation and he considered lumbar puncture as a most valuable diagnostic symptom. He was surprised to find in his consultation practice that almost invariably physicians used ergot instead of opium in treating cerebro-spinal meningitis.

In closing, DR. MILLER reasserted his belief in the efficiency of ergot in the early stages of the disease and opium throughout the course. He also emphasized the value of the iodides.

SECOND DAY.

The following papers were read by title:

"Illuminating-gas Poison," by DR. W. B. HILL, of Milwaukee.

"Have We in Nature a Basis for a Science and Art in Medicine?" by DR. H. J. HERRICK, of Cleveland, Ohio.

"Primary Testicular Mumps," by DR. LANDON B. EDWARDS, of Richmond, Va.

"The Fundamental Principles of Etiology and Therapy," by DR. ELMER LEE, of New York.

"Hodgkin's Disease," by DR. S. E. STEWART, of Topeka, Kans.

"The Vascular Changes in Bright's Disease," by DR. JAMES TYSON, of Philadelphia.

DR. ARTHUR R. ELLIOTT, of Chicago, Ill., read a paper on

TREATMENT OF THE HEART IN CHRONIC INTERSTITIAL NEPHRITIS,

in which he reviewed the cardiovascular changes in granular kidney, and spoke of the friendly offices of the heart in compensating for the diseased organ. He believed that the extrarenal changes were not sufficiently considered in the routine treatment of nephritis. He considered it certainly narrow-minded medicine to focus attention purely on the renal symptoms, and in fact he considered the condition of the heart and blood-vessels sufficient evidence in itself of the renal changes. He dwelt upon the importance of mild exercise by the Scott method to reduce blood pressure. Hygienic and dietetic treatment are of great value. Interference with the circulatory system by drugs when compensation is unbroken is vicious practice. The most important drugs in this disease are aperients and vasodilators. Nitroglycerin is especially efficient and the iodides are valuable. The vasoconstrictor properties of digitalis are especially to be guarded against.

In discussion, DR. R. H. HENRY, of Illinois, believed in the efficacy of mercury and the iodides.

DR. NORMAN BRIDGE, of Los Angeles, said that although theoretically we should expect some direct curative effect from the iodides, clinical experience has not substantiated this thought. He pleaded for investigations to discover a curative agent for interstitial nephritis. He had seen patients die from toxemia before compensation was ruptured.

DR. ALFRED STENGEL, of Philadelphia, set forth that interstitial nephritis was a general disease to be met with by general remedies. He strongly advocated the Scott treatment and believed that the decrease in blood pressure was greater than supposed. The continued use of small doses of mercury is permissible, and he believed sodium iodide is borne better than potassium salt.

DR. WELLS, of Chicago, considered that a reduction of the daily work was necessary, and emphasized the importance of limiting the amount of nitrogenous food.

DR. JENKINS, of Iowa, dwelt upon the importance of nitroglycerin.

A CAUSE AND DIFFERENTIAL DIAGNOSIS OF ACCIDENTAL HEART-MURMURS.

DR. GEORGE W. WEBSTER, of Chicago, read this paper. Every theory or fact in physical diagnosis should be, not the violation, but the realization of a physical law; arguments were given tending to show that no single theory accounts for all accidental murmurs; there is a probability that all accidental murmurs are, like those of organic disease, due to the production of "fluid veins." This may be due to temporary dilatation of the pulmonary artery, relative insufficiency of the tricuspid or the mitral valves, and possibly other causes. The diagnosis rests on: (1) The exclusion of organic disease as shown by (*a*) absence of a history of antecedent casual disease; (*b*) absence of the results of valvular defects as evidenced by hypertrophy and dilatation, or by damaged or broken compensation. (2) By (*a*) history of such disease or conditions as acute intoxications, chorea, the anemias, etc., with which these murmurs are frequently associated; (*b*) the character-

istics of the murmur as shown by rhythm, point of maximum intensity, area of audibility, posture, exercise, etc.

THE TRANSMISSION OF SYSTOLIC MITRAL MURMURS, WITH SPECIAL REFERENCE TO THE NATURE OF THE SO-CALLED ANÆMIC MURMURS.

DR. HORACE D. ARNOLD, of Boston, read a paper under this title. The question of the nature of the so-called functional murmurs has been many times discussed, but the diversity of opinion among the best authorities still leaves it among the unsettled problems. Any contribution to our knowledge, however small, is welcome. The discussion has turned chiefly on the point of maximum intensity of these murmurs — their distribution has not received the attention it deserves. We shall consider mitral systolic murmurs and their distribution; why they are heard at the apex; their transmission to the left from the apex and from the left side of heart; their transmission to the back; systolic murmurs (mitral and others) over the "valvular" area; mitral murmurs in the second left interspace, and their distribution beyond this area; so-called "anæmic" murmurs in the second left interspace and their distribution beyond — similar to mitral; illustrative cases.

DR GEORGE DOCK, of Ann Arbor, Mich., read a paper on the

USE OF QUININE IN MALARIAL DISEASES.

The author dwelt upon the importance of lessening the paroxysms of malaria on account of the disintegration of blood corpuscles. As we have a specific in quinine it is certainly our duty to use it. In this country 15 to 20 grains is usually the daily dose, and in practice it is better to give 15-grain doses at once, or 5 grains at short intervals, followed by 15-drop doses of hydrochloric acid. Small doses repeated several times a day are of avail only in the tonic treatment during convalescence. He advised that the best time for administration was in the stage of decline. For prophylaxis against relapses 10 grains of quinine every five or seven days should be given for several months. He believed that true malarial hemoglobinuria was quite uncommon and that many cases were so diagnosed incorrectly. Of course, quinine should not be used unless there was an absolute diagnosis of malaria.

In an article on

HYPODERMIC USE OF QUININE IN THE TREATMENT OF MALARIA,

DR. G. A. FACKLEY, of Cincinnati, after reporting 20 cases of positive malaria in which he had tried the hypodermic medication, condemned it as being successful in only 3 cases, while in the remaining 17 cases oral administration was successful. He attempted to explain the failure of the hypodermic method by the production of local irritation. He believed that the only indication was when the drug was rejected by the mouth or rectum.

In discussion, DR. STOCKTON, of Buffalo, suggested that as there was a distinct personal variance in the activity of gastric mobility and absorption, there should be no rules for the time of dosage for all persons alike.

DR. DALAND, of Philadelphia, grouped the failures of quinine under two heads: (1) When the drug was not absorbed; (2) when the diagnosis was faulty. He was inclined to believe that the drug should be given during the decline of the paroxysm, and advocated the preliminary use of calomel to further absorption.

DR. F. S. JOHNSON, of Chicago, spoke of the advantages of very deep injections and of the use of quinine by inunction. He gave an interesting case in which the oral method had to be abandoned for the injections on account of accompanying mental delusions.

DR. H. A. HARE, of Philadelphia, regretted that Southern physicians, who had by far the best opportunity to observe malaria, had not done more scientific work in the study of the disease. He dwelt upon the importance of the preliminary hepatic stimulants as by the use of the mercurials and acids. He called attention to the value of blood-examination in differentiating the disease from typhoid fever. He considered hypodermic injections almost useless on account of the precipitation by the alkaline fluid of the tissues, and local inflammation. In its place he would use the normal solution of quinine injected directly in the veins. He spoke of the dangers to the heart of large doses of quinine.

DR. DUNHAM made a plea for the hypodermic injection of the double salt of quinine dissolved in two parts of water, and advised to keep it out of the muscles.

DR. J. C. WILSON, of Philadelphia, in answering Dr. Hare's objection to the hypodermic injection, said that the blood, as well as the rectal secretions, was alkaline, and that although quinine was first precipitated it was afterward absorbed. He preferred the hydrochlorate of quinine, and thoroughly believed in the importance of the hypodermic method in many cases of malaria of long standing.

In closing, DR. DOCK pointed out that the deep hypodermic injections were superior to superficial ones, and that, after all, the method was not generally useful.

The following papers were read by title:

"Syphilis of the Liver," by DR. GEORGE L. COLE, of Los Angeles, Cal.

"Frequency of Subcrepitant Râles in Healthy Chests," by DR. RICHARD C. CABOT, of Boston.

"Traumatic Neurosis Without Ligation," by DR. SIDNEY A. FORD, of Boston.

"The Superstitious Theories and Treatment of Both Extremes of the Century," by DR. ALONZO GARCELON, of Lewiston, Me.

"Treatment of Aneurisms by Gelatine Injections," by DR. T. B. FUTCHER, of Baltimore, Md.

DR. EDWARD F. WELLS, of Chicago, in a general introductory paper covering the field of pneumonia broadly, opened a

SYMPOSIUM ON PNEUMONIA.

He proposed the questions: Is the pneumococcus so often found in the mouth identical with that found in the lungs? How does it enter and what measures may prevent or destroy its virulence? He considered a pulse of 140 a dangerous sign, as well as dyspnœa and the rising and falling of the trachea. He has collected 350,000 cases in which he found the high mortality of 21 per cent. He spoke of the efficacy of venesection in phlethoric persons, and considered that in these cases the procedure had no satisfactory substitute. He also advised a simultaneous subcutaneous injection in the chest of a normal saline solution or

the use of an enema of the solution to replace the quantity of blood drawn. From the beginning to the end of the disease, vasomotor paresis must be met with by strychnia, digitalis and morphine.

THE PNEUMOCOCCUS.

This paper by Dr. Gustav Futterer, of Chicago, Ill., was read by title.

Dr. Alfred Stengel, of Philadelphia, read a paper on

THE BLOOD IN PNEUMONIA.

He limited himself to the clinical examination practical to general physicians, omitting special examinations, such as bacteriology and the estimation of the quantity of fibre in the blood. He called attention to the presence of a chemotactic form of leucocytosis which had an important relation to the diagnosis.

SYSTEMIC INFECTION IN PNEUMONIA, THE COMPLICATIONS AND THE SEQUELÆ.

Dr. Robert A. Preble, of Chicago, read this paper and considered as complications: (1) *Mechanic* plugging of the bronchi; effect on symptoms and physical signs; dilatation of the heart; jaundice; theories of causation. (2) *Infectious:* Septicemia, pleuritis, endocarditis, meningitis, pericarditis, arthritis, miscellaneous mixed infections. (3) *Toxic:* Delirium; renal changes. In the sequels he classed delayed resolutions, nephritis, induration, neuritis, abscess, gangrene.

Dr. Hobart A. Hare, of Philadelphia, read a paper on

THE TREATMENT OF PNEUMONIA.

He believed that the abortive treatment by venesection, aconite, and veratrum viride was applicable only in a few vigorous cases and in the early stage. Heat and cold upon the chest are useful sedatives, and small doses of aconite and opium are permissible. Later on in the disease, venesection should not be used on account of the prolonged after-effect. He advised cold sponging and ice-bags to the head and over the heart. Antipyretic drugs are dangerous, and rarely, if ever, serviceable. As a rule, a failing pulse indicates sedatives rather than stimulants. He believed digitalis was given too often and in too large doses, and often in ineffective preparations. Belladonna was strongly recommended in vasomotor relaxation. He had little experience in suprarenal extract. He cautioned against the promiscuous use of strychnia as a stimulant. It should be used at the proper moment and then heroically. Such substances as alcohol and coca are far better for continuous administration. Nitroglycerin is useful in the aged and when the arterial tension is great; the value of oxygen-gas is problematic.

In discussion Dr. Musser, of Philadelphia, called attention to the fact that pneumonia is a systemic affection rather than a lung disease. Very often, when there is complete absence of physical signs, we have intense symptoms of general infection. He referred to aberrant forms of pneumonia, and called attention to cases in which there was striking simulation of appendicitis. He believed that on account of its insidious onset pericarditis was often overlooked, and remarked on the occurrence of localized areas of intralobar pleural infection. He dwelt upon the value of dry cups in the treatment, and spoke encouragingly of the local application of cold cloths, not only for the local effect but for the relief of the general toxic symptoms. He had never used aconite or veratrum viride and doubted their indication. A most important point is the maintenance of the secretory functions by laxatives, diuretics and diaphoretics. Large amounts of water should be given. In all toxic affections, so long as the urinary secretion is abundant, there is no cause for alarm. He advocated the use of strychnine in emergencies and nitroglycerin in the later stages, but had seldom used digitalis.

Dr. Stockton, of Buffalo, confirmed Dr. Stengel's statements that leucopyemia does mean a fatal issue. He cited an instance of pneumonia of the relapsing type. He did not believe in the use of stimulants if they could be possibly avoided early in the disease, as this prevented their later employment. He believed in large doses of calomel to rid the system of the toxic poisons. When needed in critical cases strychnia is indicated in large doses hypodermically, and so given has saved many lives. He took exception to Dr. Hare's fear of the nervous symptoms so induced and if thought necessary he combated them with opium.

Dr. George Dock, of Ann Arbor, believed in watching carefully the treatment of pneumonia, and added his voice to the value of strychnia and calomel. He believed the local application of ice-bags over the affected parts in previously healthy people far better than the use of the cold bath, and urged more general adoption. Heat does not relieve the pain so well as cold, and poultices are not always efficient, and are very inconvenient. He laid great stress upon the use of the aspirating needle and early bacteriologic examination in the diagnosis of pleural involvement and in forming the prognosis.

Dr. A. M. Holmes, of Denver, mentioned that in Cripple Creek, Colorado, which is in a high altitude, there was great prevalence and high mortality of pneumonia, and it was customary as soon as the diagnosis was made to get the patient into the lowlands.

Dr. J. M. Anders, of Philadelphia, said that a serious phase of this question was the fact that while the mortality of typhoid fever and other infectious diseases has been steadily decreasing, that of pneumonia has been increasing. He strongly advocated bacteriologic examination of the sputum to differentiate between streptococcic and pneumococcic infection; in this way only can the proper use of any antitoxic serum be made. He has found a moderate leucocytosis, as a general rule, and has found that it may persist as long as twenty-four hours after the true crisis. He cited a case of relapsing pneumonia in which neither the pneumococcus nor streptococcus was found in the sputum, and inferred that the rare relapsing cases might be due to some other micro-organism. He approved of Dr. Hare's division of cases into sthenic and asthenic forms, although the former are rare in city practice. He considered moderate bleeding permissible in sthenic cases, and warned against the use of cardiac depressants. In the asthenic cases, he resorted to the hypodermic use of morphia and of the repeated dry cupping. He concurred with the other speakers in the value of strychnine, and believed that when once given it should not be withdrawn abruptly. Turpentine should be accorded a trial in cases of delayed resolution.

Dr. H. B. Favill, of Chicago, dwelt upon the fact mentioned by the other speakers that the disease was a general and not local infection. He believes that

much was to be expected in the future from hydrotherapy.

In closing, DR. WELLS said that while there was no doubt that the dangerous symptoms of pneumonia pointed to general infection, he believed that the disease originated in the lung. He hoped for advances in the field of prophylaxis.

DR. HARE explained that he was clearly misunderstood in regard to his attitude toward strychnine. When it was needed, he believed in heroic doses, but the drug should not be used in small doses repeated for several days. If he could have but two means of combating the disease, he would select the ice-bag and the hypodermic injection of strychnine.

DR. G. BETTON MASSEY, of Philadelphia, made a

FURTHER REPORT ON THE CATAPHORIC TREATMENT OF CANCER.

Cataphoric insertion of nascent salts of mercury in a strength that will deluge interstitially a given tract of tissue or an organ, constitutes a therapeutic procedure of this author. Besides its application in massive dose, generally in association with nascent zinc salts, in the interstitial destruction of the malignant cells or germs of cancer and sarcoma, the method is applicable to the treatment of tuberculosis of accessible portions of the body and to many other conditions where an interstitially-driven germicide will be effective; all ulcerations, cysts, cavities and morbid structures being rendered permanently aseptic by the diffused materials, until perfect healing has been secured. Tissues subjected to the application, whether a small dose has been used or a massive one under ether, show the development of two distinct zones, that nearest the electrode being a zone of total necrosis, around which a line of demarcation subsequently forms, beyond which appears a zone of infiltration reaction, which shows much puffiness and redness for days subsequently, and within which there is evidence that stray malignant cells are killed and the physiologic resisting forces of the body roused. Details are given of cases of sarcoma and carcinoma, ten in all, that have been successfully treated by the method.

DR. G. M. GOULD, of Philadelphia, read a paper entitled

A FALLACY OF THE REST-CURE TREATMENT.

He described three cases which he had treated and in which the general physician or neurologist had ordered the rest-cure without any inquiry as to the existence of eye-strain. A potent and frequent cause of the neurasthenia, hysteria, denutrition, etc., of patients needing the rest-cure, is eye-strain, the symptoms of which are frequently not traced to the true cause and which is thus ignored in the treatment. Mydriasis in such cases, continued for a time, would not only prove a certain means of differential diagnosis, but as good a method of cure as the rest-cure itself.

In discussion, DR. MASSEY, of Philadelphia, took exception to the assumption that neurologists considered the rest-cure the proper treatment for neurasthenia.

In an article on

THE MEDICAL TREATMENT OF MOVABLE KIDNEY,

DR. ALFRED STENGEL, of Philadelphia, confined his remarks to medical measures for restoring the displaced organ. He considered two plans of treatment: (1) Overfeeding, to restore the necessary perirenal fat, which, however, was usually unsatisfactory. (2) The artificial support by an abdominal belt and pad. Most pads are improperly made. They should be so constructed as to exert pressure upward, backward and to the right, instead of directly upward, as is usual. The pad he uses is of kidney shape. He cited cases in which such a pad produced great relief.

In discussion DR. STOCKTON, of Buffalo, said that in thin persons with movable kidney and enteroptosis overfeeding was impracticable. As a rule a pad is unnecessary, often a bandage is sufficient. He suggested the addition of Swedish gymnastics to Dr. Stengel's plan of treatment.

ACUTE ENDOCARDITIS.

DR. W. A. NIELSON, of Milwaukee, read this paper.

The Nominating Committee made the following selections which were favorably acted upon by the section: For Chairman, Dr. George Dock, of Ann Arbor; Secretary, Dr. H. Y. Futcher, of Baltimore.

THIRD DAY.

DR. GEORGE BOODY, of Independence, Ia., read a paper on

TWO EPIDEMICS OF TYPHOID FEVER IN THE IOWA HOSPITAL FOR THE INSANE.

The author concludes that cases of inverted typhoid fever are comparatively rare. In two epidemics recently reported it occurred but once in 43 cases. Of the patients recovering from the aforesaid epidemics, 25 per cent. showed marked improvement in nutrition and muscular strength, while the remainder only reached their former condition, which it seems is a peculiarity in insane patients. Those who improved mentally showed a corresponding improvement in nutrition, which when the mentality returned to normal was remarkable. The author presents these cases as examples of the influence of the mind over nutrition and assimilation. Of the cases reported, nearly 17 per cent. all (afflicted with dementia) improved mentally but seemed to relapse, except in one case in which the improvement was somewhat prolonged; nearly 3 per cent. (afflicted with melancholia) made partial recovery, 5½ per cent. regained their former mental status.

A QUARTER OF A CENTURY'S EXPERIENCE WITH TYPHOID FEVER, WITH SPECIAL REFERENCE TO SOME UNSETTLED PROBLEMS.

DR. JAMES L. TAYLOR, of Wheelersburg, Ohio, read this paper. The author presents a contrast between accredited scientific opinions concerning typhoid fever as advocated formerly and those generally received to-day; how typhoid has displaced marsh fevers; different epidemics characterized by different types of the disease; the varying forms of typhoid; can the radically different types assumed in different epidemics depend on identical causes? Points of similarity between epidemics of typhoid and those of cerebro-spinal meningitis; greater severity of former typhoid epidemics; propagation of certain typhoid epidemics sometimes toward the source of streams instead of toward their mouth; in farming districts typhoid spreads without any possible dependence on water supply; rôle of Eberth's bacillus — some confusing effects of bacteriologic research; practical value of Widal's and other

tests; an anomalous form of typhoid occurring since the influenza visitation of 1889; what points are of most value in determining prognosis.

DR. ALFRED C. HAVEN, of Lake Forest, Ill., read a paper on

A NEW BATH FACILITATING HYDROTHERAPY IN PRIVATE PRACTICE.

He gave a brief history of hydrotherapy, with the reasons for its use and prejudices against it. He has devised a new bath for use in private practice which consists of a canvas strap encircling the headboard of the bed, the ends of the canvas belt fastened by a simple catch so that the belt can be drawn taut. Another canvas belt of similar design is applied to the footboard, there are two rings in each canvas strip twenty-six inches apart; the water is contained in a rubber sheet, hemmed at both sides, in which slip ropes containing four snaps on their ends. The patient is rolled on the sheet, the snaps are caught in the rings and the tub is ready for the water. It is emptied by lowering one corner and completing by a rubber hose syphon. In his judgment such a portable apparatus leaves the practitioner no excuse for neglecting such a potent therapeutic means as hydrotherapy.

DR. L. B. ROUSH, of New Haven, W. Va., read a paper on

THERAPEUTIC PRINCIPLES IN THE TREATMENT OF TYPHOID FEVER,

in which he stated that he considers that certain agents have a somewhat specific influence in lessening the serious effects of typhoid fever. He prefers to institute a moderately free catharsis, especially with calomel, although other cathartics may be used. The course is continued for the first six or eight days and changes the character of the stool; by it the toxemia is in a measure prevented and the symptoms greatly mitigated. In the further progress of the disease ammonium or sodium salicylate is given in solution of five-grain doses every two hours, day and night, throughout the course of the fever, unless the evening temperature falls below 102°, when the medicine is discontinued during the night. Sponging with water is necessary, the temperature of which he regulates according to the patient's feelings. Water and fruit juices should be freely administered; by far the best means of nourishment is milk, although it does not always agree with the patient. He believes that in most cases properly treated patients should get up rather than use the bedpan. Tympanites is considered evidence of continued multiplication of the typhoid bacilli and every effort should be made to avoid it. Catharsis, strychnine internally and turpentine stupes externally are to be preferred. The author claims that with his methods of treatment he has only had a mortality of 3½ per cent. in 143 cases.

DR. E. C. BRUSH, of Zanesville, O., read a paper on

THE USE OF ACETANILID IN TYPHOID FEVER.

The cases reported are those of soldiers sent home last August and September from Camp Geo. H. Thomas, Chickamauga, Ga. They were treated in the Zanesville hospital. The only antipyretic used was acetanilid. The rule in using acetanilid was to give three grains every two hours when the temperature reached 101°. As soon as the temperature fell below 101°, the acetanilid was discontinued. Usually the patient would perspire and the temperature drop from one to two degrees after the second dose. A third consecutive dose was not needed often. The shortest course of the fever was twenty-four days, the longest thirty-five, with an average of thirty days. Only one case was fatal, death occurring in the fourth week from intestinal hemorrhage.

In discussion, DR. WITHERSPOON, of Nashville, said that he believed that in Tennessee the fever is of different type, the temperature coming on suddenly without any period of incubation, accompanied with great prostration, the skin being moist rather than dry. There is general abdominal tenderness, the scaphoid belly and constipation rather than a mushy diarrhea, the fever runs a rather low and favorable course, there is no enlargement of the spleen or liver and the nervous symptoms are those of mild mania. He did not agree in the belief of the efficacy of purging and considered repeated administration of large doses of calomel very bad treatment on account of the risk of increased inflammation and ulceration of the intestine, the purge encouraging a rapid slough. The danger in the disease is from the toxic effect on the nervous system. The Brand treatment not only lowers the temperature but acts as a nerve tonic; acetanilid and other coal-tar derivatives are not safe on account of their effect on the vital resisting power of the patient.

DR. MILLS, of Illinois, said that he has been in the habit for many years of treating typhoid with turpentine emulsion and the other methods laid down by the late George B. Wood, of Philadelphia. He believes that very often there was a combination of typhoid and malaria, both of which must be treated to ensure success.

DR. CROOK, of Tennessee, remarked that his treatment of typhoid fever was directed along the principles of caring for septic wounds, namely, drainage and antiseptics.

DR. BISHOP, of New York, believes that the employment of cold baths eliminated the toxins; he expressed his belief that an efficacious antitoxin was not far distant.

DR. CHARLES G. STOCKTON, of Buffalo, N. Y., read a paper entitled

ACCIDENTAL OR SPURIOUS ALBUMINURIA.

He grouped under this heading those cases in which the albumin finds its way into the urine from the pelvis of the kidneys, ureters, bladder and genitalia. He dwelt upon the importance of considering the possibility of accidental albuminuria, and further said that the urine in such cases should be frequently and carefully studied to make sure that the infection was not invading the true kidney structure.

The next number on the program was a paper by DR. C. W. PURDY, of Chicago, entitled

THE QUANTITATIVE AND QUALITATIVE ESTIMATION OF ALBUMINURIA.

This essay was read by DR. A. R. ELLIOTT, of Chicago. The author considered the gravimetric method, Tanret's titration method, with a double iodide of mercury and potassium, with mercuric chloride as an indicator; the time-reaction of Brandberg; the differential-density method of Lang, Hœbler and Bernhardt; Esbach's volumetric method, and his own centrifugal method, giving both volumetric and gravimetric percentages, with error

not exceeding .02 per cent. His method consists in the following steps: precipitation of the albumin in carefully graduated percentage-tubes of 10 cubic centimetres of urine by means of 2 cubic centimetres of 50-per-cent. acetic acid and 3 cubic centimetres of 1–10 aqueous solution of potassium cyanide; after mingling the urine and reagents, the tube should stand for ten minutes to insure precipitation of the albumin; at the end of ten minutes the percentage tubes are placed in a centrifugal machine, the radius of which, with the tubes in position, must be exactly 6¾ inches. The tubes should be revolved for exactly three minutes at a uniform speed of 1,500 revolutions per minute; the tubes are next removed, and the amount of albumin is read off in bulk-percentage, which, by the aid of an accompanying chart, may be quickly converted into percentage by weight and fluid ounce.

In discussion, Dr. Elliott, of Chicago, remarked that cases of nephritis, unaccompanied by albumin in the urine, occurred more frequently than is generally supposed. He referred to albuminuria accompanying gastro-intestinal disturbances, probably of toxemic origin, which caused an irritation of the renal cells and other secreting structures of that organ. In such cases the urine is of high specific gravity, and throws down acid elements. He spoke favorably of Dr. Purdy's method.

DR. H. B. FAVILL, of Chicago, spoke of the importance of this subject in life-insurance examination. Albumin may be absent in positively nephritic persons, and certain other signs should be remembered in determining the diagnosis. When albumin appears in the urine, a microscopical examination should be made to determine whether the origin is renal. Again, albuminuria may be transitory, and not an evidence of disease; he had seen large amounts of albumin and casts in cases of apparent nephritis disappear. In such cases there was a coincidence of a large amount of indican, probably the results of blood changes.

The following papers were read by title:

"Some of the Ways in which X-rays assist in Medical Diagnosis," by DR. F. H. WILLIAMS, of Boston, Mass.

"The Application of the Centrifuge to the Examination of Feces," by DR. C. D. SPIVAK, of Denver, Col.

"The Changes and Diseases peculiar to Old Age," by DR. J. W. BELL, of Minneapolis, Minn.

"Rheumatism: its Etiology, Pathology, and Treatment," by DR. A. A. YOUNG, of Newark, N. Y.

DR. FENTON B. TURCK read a paper on

THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.

The paper embodies the results obtained by a large number of experiments upon dogs and of subsequent clinical observations, all of which go to show that the colon, by virtue of its close proximity and intimate physiological relations to other organs, offers very great advantages for the treatment by means of hot-water lavage. The temperature used in Dr. Turck's colonic lavage is usually high, 55° C. or 131° F., but this temperature was used only after experiments had shown not only that it did not endanger the patients but that it also proved immeasurably more effective than water at lower temperatures. The scope of the paper covers the effect of colonic lavage at 55° C. upon (1) the heart and circulation; (2) upon the blood, producing particularly quite a marked leucocytosis; (3) effect upon the gastro intestinal tract; (4) upon the kidneys; (5) the liver; (6) upon the temperature of skin, stomach and intestines; (7) the pelvic organs; (8) the effect upon elimination, auto-intoxication and general metabolism.

The effects, according to Dr. Turck, are quite remarkable; the paper, seemingly quite complete, deals largely with the technique of the treatment, and many facts were presented, gained from experimental and clinical observations, showing that there is an increase in the number of leucocytes, and increase in blood pressure, and in the production and elimination of urea. Peristalsis of the stomach and intestine increased. It was interesting to note that upon the introduction of water into the colon at 55° C. there is first a fall in the temperature of the stomach of about 1° F., while the skin temperature gradually rises, later a general rise in temperature; upon the introduction of cold water into the colon following the hot water the body temperature returns to normal.

DR. CHARLES G. STOCKTON, of Buffalo, read a paper on

CHOLECYSTITIS.

In this interesting paper the author called attention to the following facts which were observed by him: (1) in a large number of post-mortem examinations gall-stones are found without the history of jaundice, hepatic colic or other liver disturbances; (2) in persons who have died from biliary obstruction there have been found occasionally no calculi in the biliary ducts, but one or two of great size in the gall-bladder, quite too large to engage in the cystic ducts; (3) obstruction of the biliary passages is not infrequently complete without the presence of gall-stones; (4) a calculus is sometimes found in the common duct without jaundice, colic or other symptoms of obstruction; (5) when gall-stones are found, either post-mortem or during other operations, and there have been recent symptoms of hepatic colic and jaundice, whenever they have been searched for, evidences have been found of cholecystitis, angiocholitis, or both. These observations seem to show that gall-stones may be innocent tenants of the gall-bladder; that attacks of colic may occur when gall-stones are absent, or if present too large to engage; that an inflammatory process of the biliary passages is in some way related to attacks of biliary colic. Operative procedure has for its object the cure of the cholecystosis. Undoubtedly in a certain proportion of these cases the inflammation includes the dangerous complications of angiocholitis, hepatic abscess, and peritonitis, which by the intervention of surgical procedures might have been prevented. However, even in cases in which operation is demanded, a carefully considered plan of treatment should be applied, not only to assist in recovery, but to prevent recurrences.

In discussion, DR. FAVILL, of Chicago, reported a case in which diagnosis of a calculus in the common duct was made and the patient operated upon; no stone was found, but a small nodule in the head of the pancreas had caused the obstruction. The speaker did not believe that the distressing symptoms were always the result of obstruction, and in substantiation related a case which presented all the symptoms of stone in the common duct but jaundice. After many months the patient died and post-mortem there was not found any stone, the symptoms likely being due to infection. He quoted a somewhat similar case under his observation

in St. Luke's Hospital, and dwelt upon the fact that physicians should dissociate the colic and icterus, the latter of which he maintained was mechanical.

DR. EDWARD O. OTIS, of Boston, Mass., read a paper on

THE VALUE OF THE TUBERCULIN TEST IN THE DIAGNOSIS OF TUBERCULOSIS.

In this paper the following conclusions are summarized: (1) The tuberculin test indicates early tuberculosis by a general reaction before it can be detected by other methods, with the exception, possibly, of the Röntgen rays. In the majority of cases, doses of from 5 to 10 milligrammes of Koch's orignal tuberculin are sufficient; (2) in these doses no injurious effects occur; (3) established tuberculosis may fail to give a general reaction from doses of from 10 to 12 milligrammes; (4) a similar reaction is given by syphilis in an undetermined proportion of cases; (5) there is a dose not definitely settled with which a non-tuberculous person may react or simulate a reaction; (6) the reaction may be deferred from six to twenty-four hours. The author formulates the following rules to be observed in making the test: (1) Always use the same tuberculin of a standard strength; (2) employ strict asepsis in the injection; (3) make the injections deep into the muscles of the back, arm or leg; (4) beginning twenty-four hours before the injection, a record of the temperature should be kept every two, three or four hours; (5) the test should not be repeated until several days have elapsed; (6) the general reaction may be depended upon in early cases, but in late established cases, if the general reaction fails, we should look for the local.

A FURTHER REPORT ON THE USE OF ANTIPHTHISIC SERUM (T. R.) IN TUBERCULOSIS (FISCH).

DR. A. MANSFIELD HOLMES, of Denver, read this paper. He remarked that in well-advanced cases the serum invariably causes a rise in temperature within from three to six hours. A more or less extensive infiltration of the injection-areas occurs after prolonged use of the serum. A depressing effect is produced, which is relieved by a short period of rest; usually within two or three days the lymphatic glands become tender and enlarged. He considered the advantages of the tuberculin test twofold: (1) It serves as a reliable means of estimating the degree of convalescence; (2) it serves as a safe and positive means of diagnosis when the bacilli are not found. He believes that the study of the blood count is of as great if not greater importance in diagnosis than examination of the sputum. During the good effects of the serum there is an increase of the lymphocytes of the blood. On the contrary, in rapidly declining cases of tuberculosis there is a progressive diminution in the percentage.

OUR CONSUMPTIVES; WHERE TO SEND THEM.

DR. J. F. CONNELL, of Las Cruces, N. M., read this paper. He considered it a great error to send patients to high altitudes when there was fibrosis or fibroid phthisis; such cases should live in moderate altitudes, or even on the sea level. He called attention to Southern New Mexico, where, at an altitude of 3,800 feet, is a valley surrounded and sheltered by mountains, with a rainfall averaging less than eight inches; sunshine 348 days in the year, and a winter that possesses all the necessary qualifications of climate.

SOME STATISTICS UPON SEROTHERAPY IN TUBERCULOSIS, WITH REPORT OF 106 CASES SO TREATED IN 1898, COMBINED WITH A FAVORABLE CLIMATE AND WITH STRICT SUPERVISION OF THE PATIENT.

DR. C. P. AMBLER, of Asheville, N. C., read this paper. He claims that the use of the antistreptococcic serum, in conjunction with the antitubercle serum, has proved but of little use in his hands. The antitubercle serum is indicated in the incipient cases; it is contraindicated in cases of miliary tuberculosis and in cases of extensive softening high pulse, marked emaciation, or decidedly hereditary history. The injections should not be used when the temperature passes a higher point than 101° daily. A summary of 106 unclassified cases is as follows: Cough and expectoration disappeared in 36 per cent. and diminished in 78 per cent.; the bacilli disappeared in 46 per cent. and decreased in 64 per cent.; the physical signs improved in 84 per cent.; the weight improved in 87 per cent.; the vital capacity in 92 per cent.; the temperature and pulse became normal in 72 per cent.; the average time treated was 4.9 months; the average amount of serum used, 77 cubic centimetres, apparently cured, with no relapse, 39 per cent.; great improvement in 29 per cent.; stationary, 6.6 per cent.; worse, 10 per cent.; died, 1.8 per cent. He concluded that, while serum-therapy is still in its experimental state, the results obtained, in incipient cases, justifies its continued employment.

DR. A. F. LEMPKE, of Chicago, reported

CASES OF TUBERCULOSIS TREATED WITH NITROGEN GAS.

In discussion, DR. EDSON, of Denver, called attention to the importance of early diagnosis. He laid stress upon the general depression of health without obvious causes, the patient progressively losing weight and feeling below par. In such cases an afternoon rise in temperature should be specially watched. He believed that the early stages of tuberculosis were often treated for malaria, and he cautioned against sending patients with pronounced pneumonic infiltration to high altitudes.

DR. MINOR, of Asheville, agreed with Dr. Edson, and also emphasized the importance of prophylaxis, which few patients seemed to thoroughly understand; exercises of the respiratory powers of the chest he considered useful. He dwelt upon individualism as a factor, and had confidence in the serum treatment when used as an adjuvant.

DR. ALLEN, of Missouri, and DR. PAQUIN, of Asheville, N. C., also discussed papers.

In closing, DR. MCCONNELL remarked that, in the early diagnosis of tuberculosis, potassium iodide in small doses is of service, as, after the administration of this drug, evidences of inflammation could be found by auscultation which are not present without its use.

In a paper entitled

THE DIAGNOSIS AND TREATMENT OF THORACIC EFFUSIONS,

by DR. LOUIS FAUGERES BISHOP, of New York, the author briefly outlined the results of an elaborate study of thoracic effusions, undertaken with a view to establish the importance of careful search for fluid in pulmonary conditions and in the necessity of early mechanical intervention. Serous effusion may be due

to increase of exudation or deficiency of drainage. The importance of the fluid depends upon its amount, its mechanical aspect, its quality, and how the patient tolerates it. Pus should be treated surgically. The diagnosis of thoracic effusion was considered at length, and the importance of exploratory puncture emphasized, as the classical signs are not to be relied upon. Physicians should carry a sterilized needle in a small bottle of absolute alcohol and reserve it for the particular use of exploratory puncture. He recommended a large Dieulafoy aspirator. He illustrated the importance of free paracentesis, and illustrated by fatal cases the danger of allowing even a small amount of fluid to remain in the chest. Sudden death from pleurisy with effusion may result occasionally from reflex nervous inhibition of the heart, similar to the temporary hemiplegia that sometimes occurs when the pleural cavity has been irrigated after empyema.

DR. WEBSTER, of Chicago, briefly discussed this paper.

The last paper read was by DR. J. E. GILCREEST, of Gainesville, Tenn., on

LA GRIPPE.

The author claimed there was no specific treatment for influenza. To allay the pain and soreness he used rest and free elimination from the emunctories; he at first gave calomel with sodium bicarbonate in doses large enough to cause free evacuations; he found acetanilid or phenacetin, alone or in combination with Dover's powder, useful; for muscular pains he employed sodium salicylate. Complications and relapses must be especially guarded against.

Recent Literature.

The Elements of Vital Statistics. By ARTHUR NEWSHOLME, M.D., F. R. C. P. Third edition. London: Swan, Sonnenschein & Co. New York: The MacMillan Co. 1899.

This volume constitutes the best practical treatise upon the subject of vital statistics in the English language. While the general plan of the work remains essentially the same as that of the two former editions, the present volume forms an almost entirely new book, having been very carefully rewritten, with much added valuable material. Some of the longer and less useful statistical tables in the early editions have been omitted.

The chapter upon corrected death-rates may be commended to the health officers of those large American cities who are fond of quoting crude death-rates of a very low figure, without regard to the composition of the population at different ages, and with quite as little attention to recognized methods of computing populations in intercensal years.

The thorough illustration of the subject of life-tables and the explanation of the methods of constructing them give encouragement to the publication of such tables for such American communities as have a fairly good registration of deaths in conjunction with a quinquennial census.

This book should be in the hands of every health official who has charge of the supervision of the vital statistics of the population of his district.

Text-Book of Anatomy by American Authors. Edited by FREDERIC HENRY GERRISH, M.D., Professor of Anatomy in the Medical School of Maine, Bowdoin College. Illustrated with 950 engravings in black and colors. Philadelphia and New York: Lea Brothers & Co. 1899.

In this new text-book of anatomy the object of the authors has been primarily the production of a book for the student, a book which should make the acquisition of the difficult subject of anatomy as easy as possible, both by the exclusion of a large mass of detail which is not important to a knowledge of anatomy sufficient to serve as a basis for the study of physiology, surgery and internal medicine, and by the systematic and concise, although not too condensed, presentation of the more important and practical portion of anatomical knowledge.

The fact that greater stress than usual has been laid upon visceral anatomy will increase the value of the book to the surgeon, so large a portion of whose work is now concerned with the organs contained in the great cavities of the body, and the thoroughness of the chapter on Surface Anatomy will commend the work to the same class of readers.

The illustrations of the work are in the main characterized by accuracy, and considerable artistic beauty, but their excellence hardly atones for their lack of originality, the majority being borrowed from Testut. It is a pity that in a distinctly American work such as this text-book, the illustrations as well as the text should not have been in the main original.

The method of portraying the origins and insertions of the muscles, original with Dr. Gerrish, is excellent, and is a relief from the continual repetition of Testut's plates.

The chief merit in the book will be found in the descriptive text, which is accurate, concise, and, in our opinion, gives the essentials of descriptive anatomy with less waste of words and better emphasis of important points than any similar text-book with which we are familiar

Maisch's Materia Medica. A Manual of Organic Materia Medica; Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms. For the use of Students, Druggists, Pharmacists and Physicians. By JOHN M. MAISCH, Phar. D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. New (7th) edition, thoroughly revised by H. C. C. MAISCH, Ph. G., Ph. D., Professor of Materia Medica and Botany in the Medico-Chirurgical College of Philadelphia, Department of Pharmacy. In one very handsome 12mo volume of 512 pages, with 285 engravings. Philadelphia and New York: Lea Brothers & Co.

As a manual of materia medica, an excellent work in many respects. The work has been brought well up to date and should be of great value to students of pharmacy and to those students of medicine who desire a more extended knowledge of this subject. The lack of consideration of the subject of therapeutics makes it of less value to the majority of medical students. We find that mention is still made of the toxicodendric acid of Maisch, which was proved to be only acetic acid by Pfaff, in 1897, although reference is also made to the true active principle toxicodendrol.

THE BOSTON

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THE ANNUAL DINNER OF THE HARVARD MEDICAL ALUMNI ASSOCIATION.

THOUGH still young in years the Harvard Medical Alumni Association has already come to fill a place of importance in the community, and to be looked to for expressions of opinion on matters of medical progress. Such associations are further valuable in tending to foster loyalty and develop comradeship, qualities which medical men are likely to lose in the details of their individual professional lives.

The meeting this year was one particularly memorable, both from the achievement of the past and the unusually bright prospects for the future. As guest, the Association was fortunate in having Dr. Leonard Wood, who the following day was honored by the University at large with the degree of LL.D.

Dr. David W. Cheever in his introductory remarks spoke of the growth of the Association, and also of its losses by death. Among these was the name of Francis Minot, long associated with the best interests of medicine in Boston, and for many years a professor at the Harvard Medical School. Dr. Cheever also alluded to what he termed "a burning question, which has been settled against us." He referred to the question of the right of graduates of professional schools to vote for overseers of the University, and was full of confidence that the matter would ultimately be settled in a spirit of liberality. The now definite prospect of a new Medical Library building was naturally a source of congratulation to the entire medical profession.

Following Dr. Cheever's remarks, Dr. Francis H. Brown read the report on the Medical School, which was essentially a narrative of continued progress toward improved methods and results.

In introducing Dr. Wood, the President gracefully laid stress upon his professional rather than upon his military title, speaking of him as "Dr. Wood, physician and sanitarian, rather than as Major-General Wood, military governor of Santiago." In a speech full of simplicity and earnestness Dr. Wood narrated the events of the last few months, with which we are all more or less familiar, but which on this occasion struck a peculiarly responsive note, coming from a man who stands unique in the history of the war as a fearless soldier and a marvellously successful sanitarian. It was gratifying, too, to hear on the following day from one so well qualified to speak on the subject, that the Cuban character has many undeveloped possibilities, if it be rightly directed, and that the future of Cuba has its bright as well as its discouraging aspects. Whatever the value of a pessimistic point of view may be, it is always a relief to hear from men of experience that when the conditions are met face to face, the prospect is, after all, not so depressing. Dr. Wood's remarks throughout, both at the meeting of which we are speaking and at the commencement dinner in Cambridge the following day, bore the stamp of a perfectly healthy, vigorous mind, of a man of action regarding matters of which he had first knowledge.

Dr. Herbert L. Burrell continued the after-dinner speaking by a careful consideration of some of the problems with which medical education has to deal. He spoke of the changes which are being forced upon us, and deprecated the fact that a certain tendency toward neglect of the practical side of medicine was becoming apparent that students, however skilled in the recognition of disease, were often ignorant of the methods fitting them to care for patients. He felt that there is at present a certain gap between so-called scientific and practical medicine, which should, if possible, be bridged. As improvements Dr. Burrell thought the teaching board might be more thoroughly organized; the student brought more in contact with the patient, and the line between required and elective knowledge be more sharply drawn.

Dr. E. H. Bradford reviewed very briefly the work of the hospital ship *Bay State*, with particular reference to the disinterested services of the physicians who made up its staff, and of the others who worked under the auspices of the Massachusetts Volunteer Aid Association. He also referred to Dr. Wood in a way much appreciated by his audience.

It is rare that President Eliot has not some word of hope to give on occasions of medical gatherings. This occasion was certainly no exception. He spoke of the ease with which endowments in medicine may now be secured, owing to the growing confidence of the community in the importance of medical research, and outlined the plan for the foundation of a school of comparative medicine, to which reference has been made editorially in our issue of June 15th. He referred also to the bequest of the late Calvin Ellis in glowing terms, and in his usual happy vein characterized "the medical profession as the true missionary profession of to-day."

The after-dinner speaking was brought to a close by remarks from Dr. Freeman Allen, of the graduating class.

Perhaps never before has the question of medical education and all it involves been in so unsettled, and yet in so encouraging, a state as just at this time. It will require a large measure of judgment and great

resources to attain the best results in the years to come, but we are sure that a free presentation of the difficulties and open discussion will best conduce to this end. This in a degree the annual meeting of the Harvard Medical Alumni Association tends to bring about.

A NOTABLE BEQUEST.

IT has recently been made known that the estate of the late Calvin Ellis has become available for medical purposes. The estate amounts to nearly $400,000 and by the wish of the testator its income is to be devoted to the advancement of the departments of anatomy, physiology and pathology at the Harvard Medical School. Dr. Ellis was at one time Dean of the Harvard Medical School and for many years one of its most distinguished clinical professors. He felt what others have also felt, but been unable to express materially, that teachers of non-clinical subjects do not receive a just reward for their services; the first provision of his bequest therefore was that the professors of the several departments mentioned be paid $5,000 a year, which had already been done, and then the income remaining be made available for the development of the three fundamental branches of medicine, anatomy, physiology and pathology.

Could the benefactor have forseen the exact lines in which medicine was destined to develop, he could not have given more wisely, for the great need of the present, and it will be a constantly increasing need as time goes on, is endowment for the maintenance and growth of laboratories and the cultivation of research, which the existence of such laboratories implies. It is hardly possible that he could have fully realized the enthusiasm for research which was so soon to lead to the development of what we popularly call "scientific medicine," though it had already begun during the latter years of his life. Be that as it may, the bequest is a most notable one, coming as it does from a man who, although himself personally interested in the clinical side of medicine, yet had the breadth of vision to see that the future needs of medical education would require that which money alone can give, in the development of its more theoretic aspects. In President Eliot's words when the announcement was made; "Could pecuniary resources possibly be more timely, and could there be a more delightful benefactor of the advancement of medical science than Calvin Ellis?"

THE MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.

FOR the first time in its history the trustees and members of the corporation of the Massachusetts School for the Feeble-Minded at Waverley received certain invited guests on June 20th, for the purpose of demonstrating the actual workings of this most worthy charity. All those who availed themselves of this opportunity, we are assured, came away with a renewed sense of the extreme interest and significance of the work being done at the institution in caring for the hopelessly deficient, and in training those, fortunately the larger proportion, who have still possibility of mental development.

The visitors, of whom there were possibly one hundred and fifty, were shown through the various buildings by the superintendent, Dr. Walter E. Fernald, who demonstrated the methods used in the treatment and education of the various degrees of mental deficiency. Later a demonstration of class-work was given by the teachers in charge, which was surely a revelation to most of those present.

The institution is one of which the State may well be proud; it has an interest peculiarly its own, and one too little appreciated by the profession at large. We have been hearing much, of late, of education in the broad sense, as one of the therapeutic aids of the enlightened physician, and nowhere may one see the possibilities of systematic physical and mental training reduced, as it were, to their lowest terms, so well exemplified as at such an institution. Few of us are aware of what is being accomplished so near at hand, in the way of carefully worked-out scientific training for these unfortunate outcasts. A visit forces upon one a sense of the constantly widening scope of medicine, and of its possibilities in a field regarded a few years ago as absolutely hopeless.

We sincerely hope, for the good of the people at large, and indirectly for the benefit of the institution, that the hospitable action of the trustees may be repeated each year.

MEDICAL NOTES.

YELLOW FEVER AT PANAMA. — Over forty cases and twenty deaths from yellow fever were reported at Panama during the months of May and June.

THE HELMHOLTZ STATUE. — The statue of Helmholtz, in the court of the University of Berlin, was unveiled on June 6th, in the presence of the German Emperor.

"NEGLECT, DROPSY, AND CHRISTIAN SCIENCE" AS CAUSES OF DEATH. — According to the *Chicago Medical Recorder* for June, a Christian Scientist died a few days ago in Mount Vernon, N. Y., after a three months' illness, during which she persistently refused medical treatment. The coroner endorsed on the death certificate that she died "of neglect, dropsy, and Christian Science treatment."

THE IMPERIAL SCHOOL FOR TROPICAL DISEASES. — We learn from *Science* it has been decided that the Imperial School for the Study of Tropical Diseases, the establishment of which is due to the suggestion of Professor Koch, is to be settled at Hamburg. Professor Koch originally wished to have it in Berlin, but reasons of convenience have led to the substitution of

Hamburg, where patients can be landed directly. The institution is for the present to be equipped to receive thirty patients.

APPOINTMENTS AT JOHNS HOPKINS UNIVERSITY. — Dr. J. Whitridge Williams, associate professor of obstetrics, has been appointed to the full professorship; Dr. L. F. Barker, associate professor of anatomy, has been appointed associate professor of pathology; Dr. R. G. Harrison has been appointed associate professor of anatomy.

TROPICAL MEDICINE AT UNIVERSITY COLLEGE. — Major Ronald Ross, I.M.S., inaugurated his first course of lectures on Tropical Medicine at University College, Liverpool, on June 12th, by an address on the "Possibility of Extirpating Malaria," in which he dealt in detail with the means of exterminating malaria-bearing mosquitoes.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 5, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 70, scarlet fever 21, measles 54, typhoid fever 10.

BOSTON PHYSICIANS HONORED. — Dr. C. S. Minot, Harvard Medical School, has been honored with the degree of LL.D. from Yale University; Dr. W. T. Councilman, Harvard Medical School, has received the honorary degree of A. M. from Harvard University.

BOSTON SOCIETY OF MEDICAL SCIENCES. — The last meeting of the year was held at the Harvard Medical School, June 20, 1899. The following papers and communications were presented: Dr. C. G. Page read a paper on "A Preliminary Study of Streptococci Isolated from Throat Cultures from Patients Ill with Scarlet Fever," and spoke of future work to be done in isolating varieties of streptococci. Dr. Page also demonstrated lantern-slides of a bacterium, possibly the cause of scarlet fever. Dr. Theodore Hough spoke on the effect of temperature on capillary blood pressure in the skin, and concluded that the muscles of veins and arteries work together to maintain a constant pressure. Dr. S. A. Hopkins gave a preliminary report on his experimental work on the relation of bacteria to dental caries. Drs. W. T. Porter and H. G Beyer spoke of cardiac vasoconstrictor fibres in the vagus nerve.

NEW YORK.

OVERWORK IN THE PUBLIC SCHOOLS. — At a meeting of the North Side Board of Trade, held June 27th, at which the necessity for additional school facilities in the Borough of the Bronx and the studies of children in the public schools were discussed, a report from the Committee on Education was presented, in the course of which it was said: "Our attention has been called to what would appear to be almost a physical wreck of some of our highest and best scholars, caused, as we believe, by the great amount of study forced upon them; and we deem it our duty to suggest that the children in our schools should have fewer studies, the result of which, we believe, would be far better than forcing them to such an extent that they cannot sleep from worry. We believe that a more thorough and exhaustive system of gymnastic exercise should be attached to our schools, and made a more prominent feature." The report was unanimously adopted, and among those who spoke in favor of it was Dr. Emil Heuel, a highly esteemed practitioner of the Borough, who cited the case of his little nine-year-old daughter as an example of the result of the cramming system. "She comes from school," he said, "complaining of nervous headache. It is ridiculous for a child of her age to know anything of such an ailment." Dr. Heuel was of the opinion that the mental development of the children was cultivated at the expense of their physical, and that the remedy for this state of affairs was more physical exercise and less brain-work. Apropos of this matter it is stated that the School Commissioners of Brooklyn are contemplating the experiment of a high school for girls which, in addition to mental instruction, shall afford systematic practical training in domestic economy and the industries most practised by young women who have to work for their living. The public school system, it is said, trains girls to be clerks or teachers, stenographers or business women, but gives the other girls, who form a majority, no opportunities to fit them for bread-winning.

A DEATH FROM CHLOROFORM. — A death from chloroform is reported in the practice of Dr. Joseph Muir. The patient was a boy nine years old, suffering from adenoid or other form of growth in the fauces obstructing respiration, and the operation for its removal had not yet been commenced when the fatal result occurred. The chloroform inhalation was conducted by an experienced operator, Dr. George Krauder, house-surgeon of St. Mark's Hospital.

YELLOW FEVER AT QUARANTINE. — A case of yellow fever was brought to quarantine on the steamship *Krim*, of the Munson Line, which arrived from Havana and Matanzas on June 29th. Dr. Doty decided that he would not try his serum on the patient, as the case was very far advanced (seven days) and was already doing very well, with an excellent chance of recovery.

HOW THE COST OF MEDICAL CHARITIES TO THE CITY MIGHT BE LESSENED. — The Controller has come to the conclusion that fully half of the three million dollars, including the amount received from the excise funds, which the city last year appropriated to private charities, can be saved by the Stranahan law, enacted by the last Legislature, which gives the Board of Estimate authority to make only such appropriations as it sees fit, and repeals the mandatory provisions of the charter appropriating specified amounts to a number of institutions. That too liberal appropriations by the city have a tendency to lessen

private contributions is well shown by a series of comparisons of income taken from the late report of the State Board of Charities. From this it appears that while the New York Foundling Hospital last year received $310,417 from the city, it obtained only $6,450 from private sources, the New York Infant Asylum received $86,457 from the city, against $145 from private sources, and the Colored Home and Hospital, $18,967 from the city, against $474 from private sources. Mr. Coler has been in conference with the State Board of Charities with reference to the whole matter, and has now received a letter from the secretary of the Board, Mr. Hebberd, in which he says in part: "It seems to me important and necessary that there should be in connection with your office a well-equipped bureau of charitable institutions, which through the work of inspectors and otherwise should collect, classify and file for ready reference all the useful information it is practicable to obtain with relation to those charities which seek the assistance of the city. It would seem entirely feasible and proper to make a rule to the effect that no money would be given to any charity which neglected or refused to furnish such information respecting its management as your office might require. The result of such a rule should be to let a large amount of hygienic sunlight into some institutions which are charitable when seeking donations, but not even eleemosynary when attempting to evade examination. As a general proposition, it would seem desirable to limit appropriations to charities to an amount commensurate with the useful public services rendered by these institutions, as far as can be determined. It rests entirely within the discretion of the city authorities to say how much money they wish to give to private charities, and also to see that those having the care of inmates expend the money wisely. Beyond this, to well-conducted charitable institutions and societies for beneficent purposes not having the care of inmates, a reasonable apportionment might be made, based somewhat upon the amount of private donations received by such society, and with the direct understanding that the city's moneys were to be used for the actual assistance of the poor, and not for administrative expenses.

THE BROOKLYN MILK SUPPLY. — The president of the Board of Health has requested the sanitary superintendent to make a special investigation of the milk supply of Brooklyn, as he has reason to believe that it is not as pure as it should be. Recent returns, he says, show that the large number of deaths of children, under the age of five years, in the Borough of Brooklyn (68 in Brooklyn, as compared with 33 in the Boroughs of Manhattan and the Bronx), is caused by other than climatic reasons.

THE MOUNT SINAI HOSPITAL. — In the competition of architects for plans for the new Mount Sinai Hospital, the award has been made to the design of Arnold W. Brunner, and excavation has already been commenced for the foundations. The new buildings which, exclusive of the land, are to cost about $800,000, will occupy the greater part of the block between Fifth and Madison Avenues and 100th and 101st Streets.

ARMY NOTES.

LEPROSY IN CUBA AND PORTO RICO. — Energetic measures are being taken to properly segregate all lepers in Cuba and Porto Rico. The San Lazaro Hospital in Havana now contains 370 cases of leprosy, although four months ago there were only eighty inmates. In view of this increase the institution, although well endowed, has found it necessary to ask for an appropriation of several thousands of dollars to properly continue its work. The hospital is in charge of Sisters of Charity.

THE MEDICAL DEPARTMENT PRAISED. — *The Journal of the United Service Institution of India* for April last contains an elaborate report by Capt. S. S. Long, Assistant Adjutant-General in the British Army, on the administration of the United States forces in the Philippines. Captain Long, who spent the winter and early spring in and around Manila, after free criticism of the Quartermaster's, Engineer and Ordnance Departments, speaks in terms of the highest commendation concerning the Medical Department and praises the equipment and administration of the hospitals. "The health of the troops was extraordinary," he says, "and the subject of constant remark. If the spirit of the troops was excellent it was even surpassed by that of the medical branch, who, in spite of inadequate and defective transport facilities and many other difficulties, always had their hospitals as complete and efficient as human ingenuity could make them."

SICK AND WOUNDED RETURNING. — The transport *Morgan City* sailed from Manila on June 24th for San Francisco, having 464 sick and wounded on board.

DEATHS OF TWO SURGEONS. — During the past fortnight two bright young medical men of the army have died from disease contracted in the line of duty in the military service. First Lieut. R. B. Westnedge, Assistant Surgeon, U. S. Army, died in Manila, as a result of typhoid fever. Dr. Westnedge was appointed an assistant surgeon in December last, after having taken an excellent standing in the class before the army medical examining board. He was a graduate of Rush Medical College and had completed a term as interne at the Cook County Hospital. The second death was that of Acting Assistant Surgeon F. W. Fabricus, U. S. Army, who succumbed to yellow fever at Santiago. Dr. Fabricius was a candidate before the army medical examining board at the same time as Dr. Westnedge but was rejected for physical deficiencies. Attracted by a military life he was given a contract and sent to Santiago, where he was made pathologist to the general hospital and had been carrying on earnest investigations on the subject of Cuban mala-

ria. It is supposed that Dr. Fabricius contracted yellow fever during the autopsies performed on the first cases which occurred in the recent outbreak of the disease at Santiago.

Miscellany.

MOVABLE KIDNEY.

L. L. McARTHUR advocates a new method of fastening the movable kidney in its new position: (1) A curved transverse incision below the last rib is made through all the structures at once down to the peritoneum anteriorly; (2) the peritoneum is then loosened from the lateral parietal walls by blunt dissection sufficiently to permit boldly enlarging the posterior angle of the wound without fear of injury to important structures quite back of the quadratus; (3) fatty capsule of the kidney loosened by blunt dissection; (4) the anterior layer of the lumbar fascia and transversalis aponeurosis is then loosened from the tissues on which it lies, to such an extent as will admit the kidney in the pocket thus made, the lower flap of the wound having a compartment for the lower half of the kidney; (5) prior to inserting the kidney in the new compartment, the cut edges of the transversalis aponeurosis have inserted in them two or three stitches, which serve to pucker the pocket containing the kidney; (6) the kidney having been dislocated first upward, its lower end is slid into the pocket; (7) closure now of the stitches in the aponeurosis of the transversalis fixes the lower half of the kidney external to one of the layers of the abdominal parietes, supporting the same by so broad a surface that no injury to kidney can result and no displacement occur, and employing a normal tissue not transplanted. He thinks that a pocket large enough to hold the lower half of the kidney is all that is necessary, but the kidney should be fixed in position by two or three stitches in order to hold it securely until adhesions form. It cannot be dislocated by pressure from above, which now only tends to drive it deeper into the pocket.

URETERO-URETERAL ANASTOMOSIS.

MARKOE and Wood[1] report a case of considerable interest from the point of view of diagnosis and treatment. In the course of a hysterectomy for an intraligamentous fibroid a section of the right ureter an inch and a half long was removed under the impression that it was a vein entering the tumor. The left ureter, though not cut, was so sharply kinked in the closure of the peritoneal flaps that it was completely shut off. Recovery from ether was normal, but anuria ensued, and resulted in an examination of the tumor and the identification of the section of the right ureter. The abdomen was reopened at once and both ureters found distended. The left ureter was freed by loosening the stitches which held it, and there was an immediate discharge of the retained urine into the bladder. On removing the ligature from the proximal end of the divided right ureter urine escaped into the wound. Uretero-ureteral anastomosis was then performed by invaginating the proximal end into the distal end over a catheter, which was brought out through the meatus, and circular suture. The catheter was left *in situ* for five days. Vaginal and abdominal gauze drainage was provided, and the patient made a good recovery.

A point of interest about the case is that the complete obstruction of both ureters resulted in no marked pain, or other violent subjective symptoms, and that the continuance of the obstruction for twenty-four hours did not prevent complete recovery of function.

[1] Annals of Surgery, June, 1899.

THE RANK AND PAY OF THE SURGEON-GENERAL.

THE following resolutions were adopted by the Medical Association of Georgia at its fiftieth annual session at Macon, last April:

Whereas, The position of the Surgeon-General of the United States Army involves great and grave responsibility, the direction of vast interests, the highest order of professional skill and learning and executive ability, and

Whereas, The number of officers and soldiers under the direction of the surgeon-general in an army organized as is the Army of the United States is greater than the command of a division commander,

Be it resolved, By the Medical Association of Georgia, that it is the sense of this body that the Surgeon-General of the Army should have the rank, pay and allowances of a major-general.

Resolved, That the Medical Association of Georgia requests all the medical societies of the United States to join in this appeal.

Resolved, By the Medical Association of Georgia, that copies of these resolutions be transmitted to the President of the United States, the Honorable Secretary of War and our senators and representatives in Congress, with the request that all co-operate in attaining the end sought; and further, that copies be also sent to the American Medical Association, and all other medical societies in the United States, with the request that they join in this memorial to Congress and urge prompt action upon this subject by our national legislative authorities.

METEOROLOGICAL RECORD

For the week ending June 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...18	30.07	65	70	60	70	54	62	N.E.	S.	3	9	O.	O.	
M..19	29.93	71	83	59	63	68	66	W.	S.	6	9	C.	C.	
T...20	29.84	74	87	62	65	91	78	S.	S.	6	12	C.	R.	.35
W..21	29.84	68	76	60	58	52	55	W.	N.W.	12	18	C.	C.	.12
T...22	30.18	63	72	54	56	44	50	N.	W.	12	4	C.	O.	
F...23	30.24	68	77	60	58	72	65	W.	S.W.	12	19	C.	O.	
S...24	30.10	75	86	64	72	77	74	W.	S.W.	9	20	C.	O.	.04
☞	30.03	69	79	60	63	65	64			9	13			.07

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 24, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup
New York . .	3,438,899	1160	495	16.80	11.60	9.00	.80	2.64
Chicago . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	379	122	15.86	13.00	5.20	1.82	5.72
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	168	48	6.60	11.40	2.40	.60	1.80
Baltimore . .	506,389	181	71	14.30	3.85	10.45	—	2.75
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	105	43	15.36	9.60	12.48	.96	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	44	19	15.89	18.16	—	—	2.27
Nashville . .	87,754	49	18	34.68	16.32	24.48	4.08	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	22	4	8.30	12.45	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	26	8	7.70	11.55	—	3.85	3.85
Lowell . . .	88,641	29	12	20.70	13.80	13.80	—	3.45
Lynn . . .	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	16	8	18.75	6.25	18.75	—	—
Somerville . .	61,101	12	1	—	16.66	—	—	—
Lawrence . .	57,263	24	16	25.00	8.32	16 66	—	8.32
Springfield .	56,501	14	5	35.70	7.14	21.42	—	7.14
Holyoke . . .	43,424	16	5	25.00	12.50	25.00	—	—
Brockton . .	37,278	7	2	—	—	—	—	—
Salem . . .	36,883	5	3	20.00	—	20.00	—	—
Malden . . .	34,613	6	—	—	16.66	—	—	—
Chelsea . . .	33,468	8	1	—	—	—	—	—
Haverhill . .	32,022	10	1	—	20.00	—	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	9	—	—	—	—	—	—
Fitchburg . .	29,438	8	5	—	—	—	—	—
Taunton . . .	28,167	9	2	—	—	—	—	—
Everett . . .	25,338	6	—	16.66	16.66	—	—	—
Quincy . . .	23,549	8	1	25.00	12.50	12.50	—	—
Pittsfield . .	22,643	9	3	11.11	11.11	11.11	—	—
Waltham . .	21,812	8	1	12.50	12.50	—	—	—
North Adams .	20,971	2	1	—	—	—	—	—
Chicopee . .	17,842	4	2	25.00	25.00	25.00	—	—
Medford . . .	16,511	4	—	—	—	—	—	—
Newburyport .	14,915	5	—	—	40.00	—	—	—
Melrose . . .	14,032	3	—	—	33.33	—	—	—

Deaths reported 2,361; under five years of age 897; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 387, consumption 270, diarrheal diseases 218, acute lung diseases 194, diphtheria and croup 70, whooping-cough 23, typhoid fever 21, scarlet fever 19, measles 15, erysipelas 11, cerebro-spinal meningitis 8, small-pox 2.

From typhoid fever Philadelphia 9, New York 5, Baltimore 2, Boston, Washington, Nashville, Worcester and Everett 1 each. From scarlet fever New York 14, Philadelphia 3, Washington and Worcester 1 each. From measles New York 12, Nashville, Lowell and Waltham 1 each. From erysipelas New York 7, Boston 2, Springfield and Quincy 1 each. From cerebro-spinal meningitis New York 7, Nashville 1. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending June 17th, the death-rate was 16.5. Deaths reported 3,607; acute diseases of the respiratory organs (London) 207, measles 142, whooping-cough 91, diphtheria 83, diarrhea 48, scarlet fever 25, fever 25, small-pox (Liverpool and Hull 1 each) 2.

The death-rates ranged from 9.0 in Croydon to 24 8 in Manchester; Birmingham 19.4, Bradford 15.9, Cardiff 9.3, Gateshead 19.6, Hull 16.5, Leeds 16.6, Liverpool 20 6, London 15.1, Newcastle-on-Tyne 15.5, Nottingham 17.4, Portsmouth 15.0, Sheffield 18.2, Swansea 17.1, West Ham 11.8.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 1, 1899.

W. L. BELL, assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the "Philadelphia."

H. E. ODELL, assistant surgeon, detached from the "Philadelphia" and ordered to the Naval Hospital, Mare Island, Cal.

F. M. BOGAN, assistant surgeon, ordered to additional duty at the Boston Navy Yard.

R. G. BRODRICK, passed assistant surgeon, ordered to Washington, D. C., July 6th, for examination for retirement and then home and to wait orders.

J. C. ROSENBLEUTH, passed assistant surgeon, detached from the "Buffalo," when put out of commission, and ordered to the "Vermont" immediately.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JUNE 29, 1899.

SAWTELLE, H. W., surgeon. Detailed as inspector of relief stations of the third and fourth class. June 27, 1899.

WOODWARD, R. M., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon A. R. THOMAS, to proceed to Washington, D. C., for assignment to duty. June 26, 1899.

THOMAS, A. R., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon G. T. VAUGHAN, to proceed to Reedy Island Quarantine Station and assume command of the Service. June 26, 1899.

HALLET, E. B., acting assistant surgeon. Granted leave of absence for two days from July 4, 1899. June 27, 1899.

WALKLEY, W. S., acting assistant surgeon. Granted leave of absence for three days from June 28, 1899. June 26, 1899.

BRUNNER, W. F., sanitary inspector. Granted leave of absence for three days from June 28, 1899. June 23, 1899.

RODMAN, J. C., sanitary inspector. Granted leave of absence for seven days from June 27, 1899. June 23, 1899.

THURSTON, E. J., hospital steward. To proceed to New York, N. Y., for special temporary duty. June 26, 1899.

PROMOTION.

PETTUS, W. J., passed assistant surgeon. Commissioned as surgeon. June 26, 1899.

APPOINTMENT.

FREDERICK TOWNSEND, of Michigan, to be acting assistant surgeon, for duty at Sault Ste. Marie, Mich. June 23, 1899.

RESIGNATION.

HAROLD C. ERNST, M.D., professor of bacteriology in the Harvard Medical School, has resigned his appointment as physician to out-patients in the Massachusetts General Hospital, the demands of his laboratory calling for all his time.

SOCIETY NOTICE.

AMERICAN OTOLOGICAL SOCIETY. — The thirty-second annual meeting of the Society will be held at the Pequot House, New London, Conn., on Tuesday, July 18, 1899, at 10 A.M.

FREDERICK L. JACK, *Secretary*.

RECENT DEATHS.

BENJAMIN FRANKLIN CLOUGH, M.D., M.M.S.S., of Worcester, died May 8, 1899, aged sixty-one years.

JAMES O'REILLY, M.D., of New York, died on June 26th, of paralysis. He was born in Ireland in 1828, and studied medicine at the Royal College of Physicians and Surgeons, Dublin, and the Medical Department of the University of Vermont. He retired from active practice more than ten years ago.

FRANCIS E. NOBLE, M.D., of Jersey City, died of pneumonia on June 29th. He was born in New York in 1824 and had practised in Jersey City since 1850.

BOOKS AND PAMPHLETS RECEIVED.

Modern Anatomy. By Edmund W. Holmes, A.B., M.D. Reprint. 1899.

Transactions of the Wyoming State Medical Society, May and November, 1898.

Report of a Case of Foxtail Infection. By R. C. Chamberlain, M.D., Rock Springs, Wyo. Reprint.

The Standardization of Drugs and the Forthcoming Revision of the Pharmacopœia. Reprint. 1899.

Some Misapprehensions as to the Simplified Nomenclature of Anatomy. By Burt G. Wilder. Reprint. 1899.

The Effect of Pressure in the Preservation of Milk. A Preliminary Report. By B. H. Hite, Morgantown, W. Va.

International Clinics, Edited by Judson Daland, M.D. Vol. I, Ninth Series, 1899. Philadelphia: J. B. Lippincott Co. 1899.

Notes on Malaria in Connection with Meteorological Conditions at Sierra Leone. By Major E. M. Wilson, C.M.G., D.S.O. London. 1899.

Gonorrhea in Women. Treatment of Endometritis. Gynecologic Diseases: Some Points in the Diagnosis of the More Common Ones. Tampons and Pessaries in the Treatment of Displacement of the Uterus. By T. J. Watkins, M.D., Chicago. Reprints. 1897-99.

Addresses.

MEDICINE AS A PROFESSION.[1]

BY WALTER B. PLATT, F.R.C.S., BALTIMORE, MD.

We are told that no man undertakes to build a house but who first counts the cost, and surely no man will dedicate himself and all his powers to a lifework without considering his fitness, what it has to offer him, whether he will be able to finish what he begins, and whether he will be able to make it a success.

It is difficult to conceive of a profession which ought to develop the faculties of a right-thinking man more fully than that of medicine. There is an intimate contact with all classes of men, a close view of human strength and of human weakness, of human joy and suffering, of the insufficiency of wealth and the misery of poverty, and of the connection between the sound body and the sound mind, of which we have all heard and never before realized.

We also see the enormous influence of heredity in determining lines of usefulness or worthlessness, and the sure degeneration of good old family stock, unless a little of the plebeian is infused every third or fourth generation.

All these things pass in review before the physician, imprinting the force of their truth upon his convictions. Thus his life is a satisfying one. He seldom accumulates much property, but rather a rich store of experiences, reaching upward and downward as far as human nature extends in either direction.

Among the many inscriptions in the Congressional Library who has not been struck with one of the most beautiful of them all? It embodies the creed of most thoughtful physicians, who despise the millinery of religion and the frauds with which some of her bodies are covered. We mean the verse from the Prophet Micah, "and what doth the Lord require of thee but to do justly, and to love mercy, and to walk humbly with thy God?"

Your life will be mostly in the shadow, for who sends for a physician when he is whole in body and mind, is free from pain and full of his accustomed energy, "rejoicing as a strong man"? All the more reason for an abundant supply of genuine good spirits of your own. This is the fruit of a good conscience, a first-rate digestion, and a liking for your kind as you find them, whether straight, crooked or striped. You will soon build up a clear philosophy of life, because you more than other men will see what life really is, what it amounts to and what can be made of it. You will see the beginning and the ending of life, the first and the last breath drawn and know much of what has gone on between these two breaths. You will witness some tragedy, a good deal of comedy, and a little melodrama now and then, with a liberal allowance of cheap acting that can hardly deceive any one.

A physician sees with peculiar satisfaction the mighty motto written over the portals of your university, "Veritas vos liberabit." You will find the truth no *ignis fatuus*, and while you only reach after, and still never reach it, you will not be lead into false paths, nor left standing in the mire.

As a physician you will change many of the ideas you have previously held to be true. One of these is the view you have held of your fellow-men. Men will be found to be much worse than you ever dreamed and much better than you ever supposed; stronger in right purpose than you believed, and failing those nearest them at the critical moment. You will more than accomplish the desire of Adam and become as a god, knowing good from evil more than other men. You will see the human heart stark naked, and beautiful or hideous, as it is made. No robe or cassock can hide the dreadful deformity which you alone of human beings will sometimes see beneath it. No station or high office of great estate will afford the least protection or shelter from your gaze. You will find hearts as dry of human kindness as any rock smitten by Moses in the wilderness was of water, but others brimming over with a constant and endearing sympathy that makes you instant captive. Your ideas of what men usually call the power of religion will be rudely shaken, for you will see men for years devoted to the observance of the churches tremble at the far-off bugle call of the gray angel, while gigantic rascals hear the near rustle of his wings without a tremor. Courage, then, is born and bred in men and we do not shame them for the lack of what God never gave.

Eminent physicians and surgeons are seldom ardent devotees of churches, but I believe no men are more devout in the depths of their being. What man who has an eye to see or a brain to perceive can dissect an eye or a brain, or see a living, thinking man develop from a minute cell, and doubt that an immeasurably wise intelligence devised it? You will believe in the goodness of God from a thousand proofs of it, while the mystery of pain and the misery of poverty as you see it will thrust daily darts into your soul; and, again, in the families you visit, you will see heavenly visions of unselfishness in many mothers and fathers and in some children. You will believe as much in the perfect virtue of many good women as in the almost total depravity of others. At times you will think that all men are liars, until you find those whose perfect truthfulness a thousand times outweighs those dark and devious ways. To know how good and how bad men and women are, you must practise medicine.

I would have every man about to practise medicine spend from three to six months in training in business methods, for, unfortunately, there is a business side to your profession. A physician, eminent for his learning and success, said to me, recently, "Really, the only qualities necessary to practise medicine successfully are politeness and punctuality," which I think I might interpret as tact and attention. Do not look for much leisure, for you cannot have it; do not expect too much gratitude, for that will be an accident dependent upon your personality and not upon your services. Do not think you can be your own master, for you will wash the feet of the poor. Do not think you will live to be old, for most of you will die of Bright's disease before you are seventy. But if you half deserve the name of physician, you will lead a satisfying life, become a reverent philosopher, and, when the end approaches, go,

> "As one who wraps the drapery of his couch about him,
> And lays him down to pleasant dreams."

Who will say that this work is not more than interesting? It is fascinating. It will hold you day and night. You are not a passive spectator, for you control the whole show.

[1] An address delivered to the candidates for graduation of the Johns Hopkins University, May 9, 1899.

To feel that you hold the life of a man in the hollow of your hand, that his earthly career is at the ends of your fingers, that you are surely going to save him from death by your action, by your intelligence, and that his years will go on as if nothing had dragged him to the edge of a precipice and almost over; is not this a triumph greater than that of a soldier, who has taken instead of saved human life? Can you imagine any greater satisfaction than to do this, not once only but many times, not to speak of the pleasure of relieving pain or bringing peace and comfort where there was unhappiness and discomfort.

Every physician should have in his office, for his own edification, the finest obtainable copies of the "Prodigal Son," to see if art can equal what he daily sees and hears. Have a statue of Venus in an opposite corner from one of Cupid, for you are a daily witness of the trouble which comes to young men and old who follow strange gods.

Moreover you must consider whether you love that profession enough to count as nothing a thousand discomforts and risks inseparable from it. Do not forget that there are 106,000 physicians already in the United States, and 165 medical colleges, to see that the supply does not give out. Some of you *must* be physicians or surgeons; you could be nothing else and nothing less. No one would ask a young eagle if he expected to fly, or a fish if he intended to swim. I do not ask these inevitables, "Will you," or, "Will you not," but even you may inquire with me what is the best way to study and practise medicine, whether it is best for me and the rest of mankind that I should undertake to relieve, to cure, to bind up the wounds of the body and heal the broken-hearted, and you will find the wounds of the heart and the pains of the soul hardly less common and demanding scarcely less tact and patience than those of the bone and flesh. Whether you will be physicians or surgeons or specialists need not now concern any of you, but whether you will be a physician at all.

No profession more strongly marks men than that of medicine. Make up your mind to that, and that whatever be your individuality it will be second and your profession first, if you are worthy of it. You will have certain characteristics of a class. You will not live as long as if you were a clergyman. The irregular hours, the sedentary life, the wear and tear of competition and of the weight of others' woes will take off a few years. What of that! We do not reckon our lives in that way! While fewer physicians become insane than members of many other occupations, a larger proportion become addicted to the use of morphine, and one of your first vows should be never to take that drug without the advice and supervision of a brother physician.

You will be somewhat more liable than other men to contract tuberculosis if you are much in contact with it in your hospital and laboratory work. You will be considerably more likely to take scarlet fever than other mortals. If you do any surgery, you will run some danger, and that not a little, of infecting yourself with septicemia. No one would surely draw back because of these! A well-known physician said to me that he thought nearly every physician had nervous exhaustion. I hardly believe this true to the extent he intended, but many of them do have something very akin to this.

Medicine is only one and the noblest of the so-called natural sciences, and rests upon the firm base of morphology, biology and chemistry — a splendid trinity. As with the early Christians who had divers gifts, some to be apostles, some evangelists and some teachers, so will medical men work in many fields. Some will take naturally to medical journalism, others to the laboratory, some to hospital work, while most of them will practise medicine in one or another department. About one-tenth of all who graduate in medicine give it up. With good preparation, fair health, plenty of industry and no end of earnestness, with a certain amount of tact and talent, your success is one of the surest things in life.

Do not suppose you can enter at once upon a practice. Two years elapsed before his first patient entered the office of one of the best-known physicians in New York City. I know of another who faithfully waited in his office on Madison Avenue one year without having a single patient. I well remember my first patient, who chanced to be a Johns Hopkins student and in great fear of baldness although blessed with hair of great length and luxuriance.

If you have any sense of humor and a proper amount of self-control, your medical experience will be as entertaining as instructive.

Do not hesitate to study medicine merely because you feel faint at the sight of sickness or wounds. I well remember seeing a friend, now one of the most eminent physicians in New York City, turn the color of sage-cheese and make a bolt for fresh air when he had the study of medicine in mind and had gone to the hospital to witness some simple, bloodless surgical procedure. At the opening of each year at the Harvard Medical School two men are stationed at the door of the amphitheatre to carry out the new students who fall fainting. This signifies no more than the peculiar and disagreeable sensation good soldiers usually have when first under fire.

As a boy every one of you has doubtless twirled a magnet round and round over a compass and watched the needle beneath, follow its every turn. If that needle were wood or lead, there would be no such eager following. If you are made of the right metal you cannot but follow where your profession leads, and you must feel toward her as a man feels toward the love of his heart; he must have that particular woman and none other. Like Cleanthes in his hymn to Zeus, "Still must you follow on" if you are true to medicine.

If you are destined to enter our profession, you will find well-written sketches of eminent medical men delightful reading. See what kind of a man was Johannes Müller, Jenner, Pasteur, or our own Austin Flint, Benjamin Rush or Henry J. Bigelow. Read of Lister and Koch, of Virchow, Langenbeck and Billroth, and if the cockles of your heart do not glow, you can never take fire from our shrine. Get some hospital house surgeon to take you on his visits, look at, listen to and feel what he shows you in hospital wards, and if you can be dragged away without the keenest regret that you may not stay longer, you are not worthy. Do not think for a moment that any amount of brilliancy or influence will avail in the long run. One thing only gives solid reputation, and that is a great deal of good work. It has been my good fortune to meet and know some great medical men, and not one of them but won his laurels by continuous hard work.

One of the characteristics of all virile men is the

wish to make every man with whom they come in contact feel and think as they do. They are secular missionaries. You must make up your mind to be missionaries of hygiene for the rest of your lives. But most men will still do as they choose, preferring the possibility of a cure to a certain prevention.

You will be in very good company. Jenner, Pasteur, Roux and Koch, Behring, McDowell and Morton will lead. What other man than Edward Jenner since the world began has saved directly, by one single discovery and invention, several millions of lives? and could a monument as high as Heaven itself be too high for such a man! Think of the laurel crown for the man who discovers a cure for consumption and for cancer! You will surely never lack for lofty aims if you study medicine. Think of that horrible and heretofore absolutely hopeless disease, hydrophobia, and of its reasonably certain cure by a few harmless and painless injections, the discovery of Pasteur. Think of the scourge diphtheria was, and the comparatively innocent disease it has become when treated with early intelligence according to the method of Behring and Roux. All our recent and great cures have been thought out by men of the laboratory, who could look through microscopes and know what they saw, who could sacrifice a few animals on the altar of science that men might live. Great universities like this, your Alma Mater, provided these laboratories and gave their devotees food while they worked.

Sir James Paget, in an address before the Medical School at Leeds (1865), says: "I suppose that one of the keenest of intellectual pleasures is in the clearing of a view of truth." Now, your whole professional life will be filled with that pleasure or may be so filled.

Dr. Da Costa puts it well when he says (Valedictory Address, 1883): "To be the welcome visitor, the one to whom all turn in trouble, and to whom family secrets are confided with the freest faith that they will be sacredly guarded; to be eagerly sought for in hours of danger and of anguish and feel that you have the power of relieving; to be the hope of many and the friend of all — this, surely, makes a splendid calling"

We have the authority of Dr. John Draper for the statement that in the early years of European medicine, about the year 1200, nearly every physician of that time was a Jew, and that of the libraries of the universities of Salerno and Montpelier, the two seats of medical learning of that day, one-half the books were Hebrew and the other half Arabic. In a word, European medicine at the outset was Asiatic. In one of those wild waves of antisemiticism in 1306 all Jews were prohibited from practising medicine in France. There is no doubt that the physicians of these times were a weird lot, partly astrologers; later, leeches and barber-surgeons were added to the list, and a little later they were often monks.

The bond of the clergy is honored to this day by most physicians, in making no charge for their services, although we never knew our clerical brethren decline a marriage fee when it was pressed upon them. Medicine once sought the cloister; it now seeks the laboratory. More than ever it is a matter of physics, and disease something to be seen, heard or felt in one way or another. You need first a habit of trained, careful observation, and next a logical mind, for without a correct interpretation of symptoms, you are but a droning chronicler and not the trained historian of your patient's case. The perfection of science is prophecy, and given certain conditions you can now tell your patient what is to come. Unlike the astronomer, we cannot foretell the hour and minute, but we approach ever nearer to that ideal.

The splendid professional and social standing of Boston physicians is well known, and clearly due first to their training in a great university, and then to an enlightened public opinion. In a delightful address before the students of the Harvard Medical School (1870), Professor Andrew Peabody said: "The physician should be a gentleman. By a gentleman I mean not a person who in certain circles conforms to the conventional canons of good breeding, but one whose genuine kindness of heart never fails of its due expression in courteous speech and manners on all occasions and toward all descriptions of persons."

Boards of foreign missions have only lately learned that the missionary must be either a doctor or else he must have one in close relationship with his work if the heathen are to take any stock in his labors. One of the most important of the white man's burdens is to bind up the wounds and heal the diseases of his black, brown or yellow brother. As a physician I believe it would do more to pacify and reconcile the Filipinos to our rule to build a hospital and a school-house in every town than many soldiers and many promises of good things to come.

Physicians succeed in many things besides medicine. As you are all aware, many of our foremost men of science, especially in the fields of botany, zoölogy and biology, have been physicians. Witness Huxley, the elder Darwin and a hundred others. Among great travellers we see Mungo Park and Livingstone. The names of Oliver Wendell Holmes and Sir Thomas Browne will instantly occur to most of you as examples of the physician in literature. I believe they are poor politicians and never statesmen. A physician has never been President, seldom governor of a State, and rarely even a mayor of a large city. They have often been noted soldiers, and take kindly to war and rumors of war. The late Mr. Justice Miller of the United States Supreme Court told me that he practised medicine for five years, and if he could have had a surgical practice, he would have never studied law, but medicine as then known was too uncertain, too illogical to satisfy his mind. With him surgery was the one thing needful. We lost a good surgeon, doubtless, and gained one of our best judges. Senator Gallinger of New Hampshire, albeit a homeopath, is an M.D. Count Rumford studied, although he never practised, medicine.

Physicians are often able administrators, and make excellent superintendents of institutions. We know the laurels Dr. and Col. Wood has won as military governor of Santiago. It may be gratifying to some of you to learn that many of the most successful physicians did not stand at the head of their classes in college, while it is a singular fact that many surgeons were very dull even in the study of medicine, and seemed to gather a strange force and purpose after passing their year in a hospital.

A physician ought to be a gentle Stoic, a bit of an Epicurean, and a true Christian gentleman. We read that Arthur, when he made a knight, said: "Be ye a good knight, and so I pray to God, so ye may be, and if ye be of prowess and of worthiness, ye shall be a knight of the Table Round"; and we who are physicians say this to every one of you.

THE CAVENDISH LECTURE ON THE ETIOLOGY AND DIAGNOSIS OF CEREBRO-SPINAL FEVER.[1]

BY WILLIAM OSLER, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore, Md.

(Concluded from No. 1, p. 6.)

III. *Lumbar Puncture.* — During the past ten years no single measure of greater value in diagnosis has been introduced than Quincke's lumbar puncture. We are now able in a large number of cases to make a prompt decision as to the existence of meningitis, and are further enabled to recognize the form of the disease. I shall not detain you with details of the technic, available in all text-books, and recently considered at great length in an elaborate "Referat," by Neurath, in the *Centralblatt f. d. Grenzgebiete der Medizin und Chirurgie*, Bd. I. It is a simple, quite harmless procedure, and in a majority of the cases can be done without general anesthesia, or with the aid of a local freezing mixture. A dry tap is rare in cerebro-spinal fever; the needle may be plugged with fibrin, or a nerve root may come directly against the orifice. Puncture in the third or fourth interspace may be negative, while in the second a free flow is secured. In one of our early cases in which no fluid was obtained the autopsy showed an exudate as thick as butter, with little or no fluid. A first puncture in a case is very often negative. Though simple, the technic is, like other procedures of the kind, bettered by practice. Very often at first a few drops of blood flow, then a clear or turbid fluid, either drop by drop, or sometimes in quite a strong stream.

The fluid may be clear, turbid, purulent, or more rarely a brownish yellow, or quite bloody. In a great majority of all cases when meningitis is present the fluid is turbid. In rare instances clear fluid may be obtained when meningitis exists, and in a protracted case the fluid may be turbid at one puncture and clear at the next. Several observers have noted that the fluid may become clear in the intermissions of the disease. A clear fluid may be obtained from a puncture in the second lumbar interspace, while lower down a turbid fluid may be withdrawn. I saw this possibility very well illustrated in a recent post-mortem; the fluid in the lower dorsal and upper lumbar regions was perfectly clear, while that in the lower lumbar and the sacral regions of the canal was very turbid and contained numerous flocculent masses.

The fluid should be allowed to flow into a sterilized test-tube. When the fluid is at all turbid there is usually a slight sediment and a coagulation of fibrin. Cover-glass preparations are made either directly from the turbid fluid, or if the turbidity is slight and the cell elements few in number, after it has been centrifugalized. Cultures should be prepared at the time of making the lumbar puncture by allowing one or two cubic centimetres of the fluid to flow on to a Löffler blood-serum medium.

The amount of fluid obtained varies from a few drops to 130 c. c. The samples in these flasks show the large amount which may be removed, one 126 c. c., another 112 c. c.

Wentworth claims that within certain limits there is some relation between the degree of turbidity of the fluid and the severity of the symptoms, and this was borne out by our more limited experience. Even in the most protracted cases the turbidity may persist. Only once was a clear fluid removed in an exacerbation. On several occasions a bloody fluid was removed in Case 18. In the wards at the same time was a remarkable instance of septic meningitis in which, after turbid fluid had been withdrawn at one puncture, at a subsequent one, before death, blood flowed from the needle, and post mortem there was extensive meningitis and a rupture of the basilar artery with hemorrhages.

The number of the organisms found bears no constant relation to the intensity of the symptoms. In acute cases they are present, as a rule, in large numbers. The later the disease, the less likelihood is there to find the diplococcus intracellularis in the fluid; but we have found them in the second, third, fourth, fifth and seventh week. The following are some of the days on which the organisms were found: 17th day, 14th day, 25th day, 31st day, 41st day and 19th day.

Has the lumbar puncture any therapeutic value? Williams, of Boston, states that he has seen beneficial effects, and there are a few cases in the literature in which the severity of the symptoms were promptly mitigated by the removal of a variable amount of the spinal fluid. Wentworth (whose experience has been very large), speaking of these cases, says: "I have never seen any such cases, though constantly on the watch for them. A temporary relief, lasting for a few hours, has followed the operation in a few cases, but the same remissions frequently occur without any treatment." Netter says that he has seen convulsions, which had lasted for a long time without intermission, cease after the withdrawal of only about two drachms of fluid.

We have given this point our closest attention, and many times have performed the puncture directly for its supposed benefit. In Case 8 the note reads: "Much better after the first puncture; brighter every way." Case 9, puncture at 11 A. M.: "Patient's condition has greatly improved; the muttering has ceased, and the irregular movements are less marked." To Case 16 I may refer more fully. It was an example of the chronic form, in which the patient lingered for nearly three months. The accompanying table has been prepared by Dr. Marshall, one of my house physicians.

It gives the day of the disease, the amount of fluid withdrawn, the character of the exudate, the microscopical appearances, the culture results, the leucocytosis and the effect (?) of the puncture on the temperature. The first puncture, made on the 29th day of the illness, was negative. From the second puncture 100 c. c. of a yellowish turbid fluid was withdrawn, which contained pus cells and intracellular cocci in abundance and the cultures were positive. In all 17 punctures were made between the 29th and the 75th day of the disease, of which 14 were positive. A turbid pale-yellow fluid was removed at each tapping. On five occasions 100 c. c. or more were obtained, once 125 c. c. and once 126 c. c. Following the first two effective tappings the patient appeared better, the temperature dropped and he seemed much brighter, but he soon became worse, and the fever rose. Following the sixth, seventh, eighth and eleventh punctures the temperature fell, 4.5°, 3.8°, 4.2° and 5.8°. There was no change in the general condition, though he sometimes was a little brighter, and the drop in fever followed so directly that it seemed only natural to attribute the

[1] Read before the West London Medico-Chirurgical Society, June 16, 1899. — From advance sheets courteously furnished by the editor of the West London Medical Journal.

good results to the lumbar puncture. The thirteenth puncture, however, was negative, yet the temperature fell 5.1°, and after the fourteenth tapping the temperature rose 2.6°. Evidently not the withdrawal of the fluid, but the peculiar character of the disease, already spoken of, was responsible for the remissions. The chart illustrates further the persistence of the leucocytosis and the sterile characters of the fluid after the 44th day. I have here for demonstration the lumbar portion of the cord and its membranes. The position of the last puncture can be seen and the repeated operations have caused a slight hemorrhagic pachymeningitis.

IV. SPORADIC CEREBRO-SPINAL FEVER.

To what extent do isolated cases of cerebro-spinal fever occur in the intervals between the epidemic prevalence? What is the nature of the primary suppurative meningitis which is met with from time to time in all communities? Neither hospital statistics nor the ordinary death returns give trustworthy answers to these questions. The diagnosis of meningitis is often doubtful, and it is very probable that a great many cases are returned as cerebro-spinal meningitis which are the cerebral forms of typhoid fever or of pneumonia. It is surprising how much confusion there is in the diagnosis of the different forms, and the urgent need of a more accurate recognition of the varieties is well shown by the number of terms used in the tabulation of cases. Thus, not to speak of the tuberculous form, which is often spoken of as basilar meningitis, the terms most frequently used are acute meningitis, meningitis simplex, purulent meningitis and septic meningitis. In a recently issued report on sporadic cerebro-spinal meningitis from the Philadelphia Hospital, by L. N. Boston,[10] exclusive of the tuberculous variety, the following names occur as designating the varieties of acute meningitis; lepto meningitis, basilar meningitis, pachy and basilar meningitis, basilar and lepto meningitis, hemorrhagic meningitis and purulent meningitis.

To reach uniformity in this matter is not at present possible, but we may welcome the steps which have been taken towards separating the different forms of the disease.

In the last Census Report of the United States, the returns for the census year 1890, a year in which cerebro-spinal fever, so far as I know, did not prevail to any extent in epidemic form, the number of deaths reported from cerebro-spinal meningitis was 3,333, a large percentage of these during the first year of life.

From the Fifty-ninth Annual Report of the Registrar-General, 1896, I gather that the deaths from cerebro-spinal fever in England from 1877 to 1896 (inclusive) have only once exceeded 50 per annum. There has been a great reduction in the return since 1887, 233 cases for the ten years ending 1896, against 406 for the previous decade. In Scotland there were only six deaths from cerebro-spinal fever in 1895, and five in 1896. In Ireland there were 76 deaths from this cause in 1896, and the same number in 1897.

From the records of two large metropolitan hospitals I have gleaned the following figures: At St. Bartholomew's, from 1860, cases with the diagnosis of cerebro-spinal meningitis occur in the years 1872, 1888, 1889, 1890, 1892, 1893, 1895, 1896, 1897 — 21 in all. In many years the word meningitis alone is used, in others the word spinal meningitis and meningitis simplex. Ormerod[11] gives an exceedingly interesting report on ten fatal cases from this hospital. Four of them occurred between March and June, 1890, at which time epidemic meningitis prevailed in the eastern counties. At St. Thomas's, since 1873, cases with the diagnosis of cerebro-spinal meningitis occur in the years 1895 and 1896 — seven cases in all. In the wards of the Royal Infirmary, Edinburgh, there were in 1891 three cases diagnosed as cerebro-spinal meningitis, in 1892 two cases, in 1893 one case.

In the United States and Canada the occurrence of sporadic cases of cerebro-spinal fever in the intervals between epidemics has long been recognized. In Montreal I performed post-mortem on at least three cases of acute purulent cerebro-spinal meningitis not associated with pneumonia or endocarditis, and not following otitis media or injury. As illustrating the liability to error, I may mention a case in which the diagnosis of cerebro-spinal meningitis was made in malignant smallpox; in another instance, with the same diagnosis, the case was a very acute typhoid fever, fatal within a week. In Philadelphia I saw only three cases.

At the Boston City Hospital, from 1880 to 1896, there were 39 cases diagnosed as cerebro-spinal meningitis with a mortality of 59 per cent. It is interesting to note that during the first five months of 1897, when the epidemic began, there were 42 admissions, a larger number than in the previous seventeen years. That the disease lingers in a city indefinitely after an outbreak has been the common opinion of all students

CASE XVI. — KRATZ. — LUMBAR PUNCTURE CHART.

Puncture No.	Day of Disease.	Amount.	Character.	Microscopically.	Cultures.	Leucocytosis.	Temperature.
1	29	Negative.	.....	.....	.....	.....	Unchanged.
2	31	100 c. c.	Yellow; turbid.	Pus cells; intracellular diplococci.	Positive.	17,400	Dropped 2.4°
3	35	125	Yellow; turbid.	.....	Positive.	25,100	" 1.0°
4	37	80	Pale yellow; turbid.	Pus cells; no cocci.	Negative.	19,000	" 2.0°
5	40	85	Pale yellow.	Pus cells; no cocci.	"	28,000	" 1.0°
6	44	126	Pale yellow; cloudy.	Intracellular; diplococci.	"	15,000	" 4.5°
7	46	100	Pale yellow; turbid.	Pus cells; no cocci.	"	22,000	" 3.8°
8	48	50	" "	" "	"	19,000	" 4.2°
9	54	30	" "	" "	"	23,800	Rose 0.8°
10	59	Negative.	.....	.....	.....	.....	Unchanged.
11	59	100 c. c.	Cloudy.	Pus cells; no cocci.	Negative.	.....	Dropped 5.8°
12	62	60	Cloudy; blood-tinged.	Pus cells; no cocci.	"	18,000	" 3.4°
13	66	3	.....	.....	"	22,000	" 5.1°
14	70	75	Cloudy.	Pus cells: no cocci.	"	47,500	Rose 2.6°
15	73	Negative.	.....	.....	.....	23,000	Unchanged.
16	75	Negative.	.....	.....	.....	.....	"
17	75	8 c. c.	Cloudy.	Pus cells; no cocci.	Negative.	.....	"

[10] Medical News, May 20, 1899.

[11] Lancet, 1895, No. 1.

of the disease, and any one who has had a large post-mortem experience has met with sporadic instances of extensive suppurative meningitis, which he has not been able to regard as secondary to any existing condition. The Philadelphia records are interesting in this respect. As collected by Still from 1863, the figures illustrate very well the periods in which there were slight outbreaks, namely, 1864–65, and 1872–73. Pepper [12] completed the figures to 1892, and Dr. Abbott has sent me the figures up to date. They show from 1884 a progressive decline in the number of cases, which may in part have been due to more careful diagnosis. From this year, when there were 124 deaths, there was a gradual decline, and in 1891 there were only 23 deaths. From that year the figures, as sent me by Dr. Abbott, are as follow: 1892, 22 cases; 1893, 35 cases; 1894, 18 cases; 1895, 17 cases; 1896, 7 cases; 1897, 10 cases; 1898, 24 cases; 1899 (to and including April 31), 89 cases. Here, again, it is interesting to see how quickly the epidemic prevalence of the disease is manifest. During 1898 the disease was not recognized as prevalent in Philadelphia. During the present year a number of cases have occurred, and the deaths during the first four months have been 89.

In Baltimore, the figures for the past six years are as follow: 1893, 59 cases; 1894, 26 cases; 1895, 27 cases; 1896, 32 cases; 1897, 22 cases; 1898, 70 cases; during this year, the prevalence of the disease was recognized as occurring in a mild form through the city. During the first four months of the present year there has been an increase, and the deaths for this period have been 27.

Sporadic Cerebro-spinal Fever at the Johns Hopkins Hospital.— In the spring of 1898, the first cases of the epidemic form were admitted to hospital, and in all 18 cases have been under treatment. Prior to this date, only four cases had been admitted, which we regarded as sporadic forms of cerebro-spinal fever, three within a few days of each other, in 1893, and one, a chronic case, in 1892, which has been reported.[13]

CASE I. Patrick R. (Hospital No. 7,233), age fifty-seven, admitted May 1, 1893. The patient had been drinking heavily, and when admitted was delirious, mumbling and muttering to himself, and picking at the bedclothes, and he resisted actively any attempt to examine him. His friends stated that he had been in this condition for about a week. His temperature on admission was 97.5°, pulse 68, respirations 16. He had no skin-rash and no symptoms suggestive of meningitis, and we regarded the case as one of delirium tremens. As shown in the annexed chart (Chart VIII), he had no fever until the 5th, four days after his admission. There was then a rapid rise to 105°; the respirations increased from 28 to 40; the pulse rose to 112. Throughout the 6th the temperature remained high, falling on the morning of the 7th to 103°. The respirations rose to 48. He was a little cyanosed, could not be roused, and he died at 8 A. M. on the 7th.

The autopsy (No. 413), showed extensive yellowish purulent exudate over the hemispheres. There was a turbid exudate at the base and along the Sylvan fissures; the ventricles contained an excess of cloudy fluid. The cord was not examined. Cover-slips showed rounded cocci in pairs, chiefly in the mono- and poly-nuclear cells. Cultures showed diplobacilli. The lungs showed slight broncho-pneumonia and the pneumococcus was isolated.

CASE II. Wm. F., age twenty-seven (Hospital No. 7,282), admitted May 3, 1893. The patient was apparently very deaf, and was noisy and delirious when admitted, and he had no friends from whom any history could be obtained. The temperature on admission was 99°, pulse 86, respiration 20. During the night he became very noisy and delirious, and the pulse was irregular. On the following morning examination of the thoracic and abdominal organs showed nothing of any special moment. The spleen was not palpable. The temperature was 99°, pulse 96, respirations 24. On the evening of the 4th and throughout the night the patient became very noisy and had to be transferred to the isolating ward. It was noticed on admission that he was very deaf, and this seemed to increase. On the afternoon of the 4th temperature began to rise, and at 6 P. M. reached 102.5°. The pupils were equal; the pulse was 96, irregular. The patient resisted strongly any attempt to bend the head, and the neck was held very rigid. There was general hyperesthesia, and he cried out whenever he was touched. A petechial rash was noticed this afternoon for the first time over the abdomen. At 8 P. M. the temperature rose to 103°. He became very much worse; the pulse became more rapid, 112, very irregular, and he died a little after two in the morning.

Autopsy (No. 412): A purulent grayish-yellow exudate over the hemispheres, also along the pons and medulla, and the whole length of the spinal cord, which in the lumbar region reached a thickness of 8 millimetres. The ventricles were distended with a turbid yellowish fluid. In the posterior cornua there was a greenish exudate. Cover-slips from the meninges showed numerous leucocytes and large cells containing round diplococci. Pus from the ventricles showed many cocci, single and in pairs, chiefly in cells. Some of the larger cells were packed with these cocci. Cultures were negative. Inoculations of a rabbit and a mouse were also negative. At that time we had not recognized the diplococcus intracellularis of Weichselbaum, but the description of the organism, the position in such numbers within the cells, the failure to grow in cultures, and the negative results of experiments on animals, make it more than probable that we were dealing with this organism.

When these cases occurred the disease was not prevailing in Baltimore, and, except in New York, it was not epidemic anywhere in the country, so far as we could ascertain. Three days after the death of Case I a lad was admitted with a most remarkable family history of the disease. The father, a very intelligent man, gave the following details of the cases:

Wagner Family.— (1) A son, a young man of about twenty years, returned home on Monday, February 7th, complaining of a terrible pain in his head. He had fever with much vomiting, and his head and neck were arched. He was very delirious, became rapidly worse, and died on Saturday, the 12th; (2) a sister who had helped to nurse her brother was taken ill on Monday, the 15th, with similar symptoms, and died in four days; (3) a second sister became affected in a few days and for two weeks was desperately ill; she then began to improve and is now well; (4) the mother, who was worn out nursing the children, was taken ill on March 17th and died in two days. She had slept in the same bed with No. 5, who was admitted to the hospital.

CASE III. W. W., age fifteen, No. 5 of the Wagner family, was admitted May 12th, in the eighth week, of an illness which the doctor described as cerebro-spinal meningitis, and of which his mother and a brother and sister had died. The patient presented a dull, heavy appearance, and for some days did not appreciate his surroundings and appeared confused. He had delusions and hallucinations, and thought he saw his mother and sister in the room with him. He had no fever, and there was no rigidity of the head or neck. The optic nerves looked normal. He improved gradually and was discharged well June 10th.

[12] American Text-book of Medicine, vol. I, p. 163.
[13] Johns Hopkins Hospital Bulletin, 1892.

I can find no parallel to this record in the history of sporadic cerebro-spinal fever. The figures which I have given for Baltimore show that in the year 1893 a considerably larger number of cases occurred than in the four succeeding years, and the admission of these three cases in rapid succession excited our interest, but from this time until the spring of 1898 we saw nothing further of the disease. In the history of the epidemic form it is not very uncommon to find two or three cases from one house. Netter refers to Sewall's report of six children attacked in one family at the beginning of the New York epidemic in 1872, and he quotes from Thorne the statement of Morcieca that in Malta seven cases occurred in a family of nine persons. Such facts speak strongly for the contagious nature of the disease. Under ordinary circumstances, however, it is exceedingly rare to find more than one case in a family, either in the sporadic or epidemic form, and I know of no case in our recent American experience in which a physician or nurse has been attacked, or in which cases have developed among other patients in a hospital. We know nothing of the conditions under which the disease assumes this family malignancy, as it may be termed. In this respect it resembles pneumonia, not highly contagious as a rule, but which may at times, in a family or institution, present a high degree of malignancy.

Bacteriology of Sporadic Cerebro-spinal Fever.— In a number of cases of sporadic cerebro-spinal meningitis the Weichselbaum organism has been found. The case reported by Stewart and Martin [14] is of peculiar interest, inasmuch as the epidemic form of the disease has not prevailed in Montreal for many years. It is to be noted, however, that the patient prior to her illness had been spending a few weeks in Boston, where the disease had been prevailing. An unusual point in this case was the occurrence of an acute purulent pericarditis in addition to the usual cerebro-spinal lesions. The cultures showed the diplococcus intracellularis.

By far the most suggestive contribution to this question made of late years is by Dr. George F. Still,[15] of the Great Ormond Street Hospital for Sick Children. In a study of the form of meningitis known as the simple posterior-basic of infants, he isolated from seven or eight cases a diplococcus intracellularis. The frequency of this form of meningitis may be gathered from the fact that in ten years there were at this hospital 49 fatal cases, verified by autopsy. The smallest number in any one year was two, and the largest number seven. All of these cases were sporadic; none of them formed a part of any outbreak which could be considered epidemic. Clinically the disease presents certain differences from the ordinary type of cerebro-spinal fever, attacking young children, chiefly in the first year of life, and as a rule, is very much more chronic, though there are forms of cerebro-spinal fever which are quite as protracted. Skin rashes are rare, particularly herpes. The most interesting point of similarity determined by Still is the periarthritic affections in certain of the cases of posterior meningitis, involving, as in epidemic form, the capsule of the joint, and the sheaths of the tendons. He determined also in one case the presence of the diplococcus in exudate.

The problem is one which deserves the closest attention, and in every case of sporadic meningitis a careful bacteriological examination should be made for the meningococcus and the pneumococcus, as we are still ignorant of the proportion of cases due severally to these organisms. Two points remain for discussion, namely, the incidence of acute non-tuberculous meningitis in hospital work, and the clinical varieties of the pneumococcic form.

Through the kind permission of my colleague, Professor Welsh, one of his assistants, Dr. W. G. MacCullum, has analyzed from the pathological department of the hospital the cases of meningitis in which bacteriological examinations have been made.

The 25 cases may be divided into four groups:

(*a*) *Cerebro-spinal Fever.* — Six cases (Nos. 412 413, 1,104, 1,189, 1,314, and 1,362).

(*b*) *Pneumococcic Meningitis.* — Eight cases (Nos. 384, 478, 619, 746, 989, 1,082, 1,151, and 1,362).

(*c*) *Pyogenic Meningitis*, in which streptococci or staphylococci, singly or in association, were found — seven cases (Nos. 694, 1,065, 1,092, 1,247, 1,166, 1,363, and 1,364).

(*d*) *Miscellaneous.*— Four cases, two of which (Nos. 854 and 1,091) showed peculiar unidentified bacilli.

The pyogenic forms of meningitis do not concern us here; no case of primary streptococcus or staphylococcus meningitis came to autopsy. I have already referred to the chronic forms of cerebro-spinal fever in which the pyogenic cocci may alone be present at the time of death.

The meningitis with which the diplococcus lanceolatus is associated, in many respects the most important variety, deserves a separate consideration.

PNEUMOCOCCIC MENINGITIS.

As the pneumococcus has long been recognized as the most important organism in the production of meningitis, the first question to be considered is how far sporadic cases of cerebro-spinal meningitis are due to it. Of the 25 cases of meningitis in the pathological department of the Johns Hopkins Hospital, in 8 the pneumococcus was isolated from the exudate. Bacteriological statistics everywhere show the great importance of this organism as a factor in the causation of meningitis. Of 20 cases examined by Councilman, Mallory and Wright, there were 10 cases in which the pneumococcus was found, 8 of these secondary to other conditions, in 2 only primary. In 8 cases of secondary meningitis the streptococcus was present. Netter's experience is particularly interesting. To April, 1897, he had examined bacteriologically 61 cases of meningitis, with the following results: "Pneumococcus in pure culture 35 times, the same associated with the streptococcus and with the staphylococcus each 1 time, the streptococcus alone 13 times, the diplococcus intracellularis meningitidis 3 times, the staphyloccus pyogenes aureus and the bacillus of Friedländer each 2 times, and the coli bacillus, the influenza bacillus, a fine bacillus, and a pyocyanic and saprophytic bacillus each 1 time." We may recognize three groups of cases of pneumococcic meningitis:

I. *The Meningitis is a Complication of Lobar Pneumonia.* — In Montreal my attention was called to the great frequency of this association, in 8 of 100 consecutive autopsies,[16] and since these observations I have had opportunities of studying a number of cases, though I have never met with so large a proportion. By far the most important contributions to the subject

[14] Montreal Medical Journal, March, 1898.
[15] Journal of Pathology and Bacteriology, vol. v, 1898.
[16] The Morbid Anatomy of Pneumonia, Canada Medical and Surgical Journal, May, 1885, and the Goulstonian Lectures on Malignant Endocarditis, British Medical Journal, 1885, No. 1.

have been those of Nauwerck[17] and Netter.[18] Of the 29 cases analyzed by Nauwerck, in 4 the convexity of the brain was alone involved, in 16 both cortex and base, and in 7 the cortex, base and spinal cord. Netter's study, the most complete that has yet appeared, contains an analysis of 124 cases collected from the literature. In the recent monograph on pneumonia by Aufrecht,[19] 7 cases of meningitis were found in 253 autopsies, and of 1,501 cases of pneumonia, in 10 the diagnosis of meningitis was made, in 3 of which recovery followed. Of the 8 cases of pneumococcus meningitis in the department of my colleague, Welch, in only 4 was the condition associated with lobar pneumonia.

II. *Pneumococcic Meningitis from Local Infection.* — In this exceedingly important group the infection may come from the nose or the adjacent sinuses, from the ears, or may follow an injury to the skull, or an operation. In two of the three cases in the series analyzed by Dr. MacCallum there was fracture of the base of the skull. The third, a child, age six, had suppuration of the nasal mucous membrane and adjacent sinuses. In this connection the importance of the pneumococcus is universally recognized, and many cases are on record of infection from an otitis media.

III. *Primary Pneumococcic Meningitis.*— A number of observers have isolated the pneumococcus in primary suppurative meningitis. The records cannot be regarded, however, as entirely trustworthy, since it is only within the past few years that bacteriologists have learned to recognize the differences between the pneumococcus and the diplococcus intracellularis. Subsequent study must determine in what proportion of cases of sporadic meningitis the pneumonococcus exists, and in how many the diplococcus intracellularis.

The primary pneumococcic meningitis may develop in a person in good health, but more frequently there is a general pneumococcus infection in a debilitated individual, or in one with chronic disease. The meningitis may be present along, or, as is so common, in association with endocarditis. Of the cases examined in the post-mortem room of the Johns Hopkins Hospital, one (No. 989), a man, age forty-four, had a general infection with the pneumococcus and meningitis. Another case (No. 1,206), with a general infection, acute endocarditis and meningitis, is not included in this series, as a partial autopsy only was allowed, and but a small portion of the lumbar cord was examined.

CLINICAL FEATURES OF PNEUMOCOCCIC MENINGITIS.

I shall now refer to certain clinical features of these three groups of cases:

(*a*) *Pneumonia with Complicating Meningitis.*—Is the case one of cerebro-spinal fever with pneumonia or of inflammation of the lungs with an added meningitis? This question does not often arise now at the bedside, as it is most exceptional for the meningitis of pneumonia to present the symptoms of cerebro-spinal fever, and in a dubious case occurring during an epidemic the lumbar puncture (as in a case to be referred to in a few minutes) may be relied upon to clear up any doubts. The most valuable clinical record of meningitis in pneumonia is to be found in Nauwerck's paper. The histories, 17 in number, are very full and complete, and in every case accompanied with a post-mortem report. He has added a series of 12 cases from the literature, making 29 in all. All of the cases were above the twentieth year of age — a striking contrast to cerebro-spinal fever, in which a large proportion of all the cases are in the young. A second point is the latency of meningitis in pneumonia, which is much more often recognized in the dead-house than in the wards. Netter states that fully one-half of the cases are of this latent type. Of the cases I saw in Montreal I remember but one in which the diagnosis was made during life. Huguenin, referring to this obscurity, says: "We know no symptom which is constant in all cases or which may not be present in an identical manner in other conditions." Headache, early delirium, deepening into unconsciousness, are present in all cases. This is a consequence of the more common involvement of the cortex of the hemispheres. As Leichtenstern remarks, the mind may remain clear throughout the course of a case of cerebro-spinal fever. Spinal symptoms are rare; in only seven of the cases analyzed by Nauwerck was there rigidity of the neck muscles. Strabismus was present in one-fifth of the cases, ptosis only once. The importance of lumbar puncture cannot be too strongly emphasized. A recent case, which occurred while cases of cerebro-spinal fever were in the hospital, illustrates this so well that I give an abstract of it:

Charles E., age fifty-two (Hospital No. 26,417), was admitted May 6, 1899, with pneumonia of the right upper lobe of about eight days' duration. He was in a semi-comatose condition, with a temperature of only 99°, respirations 32, pulse 108. There was a pneumonia of the apex of the right lung. The day after admission it was noted that his arms and legs were very stiff; Kernig's sign was well marked, and there was some rigidity of the neck. The patient, however, responded to questions. Lumbar puncture was made in the third interspace, and 5 cubic centimetres of a perfectly clear limpid fluid obtained. Lumbar puncture was made again on May 10th, and 30 cubic centimetres of a perfectly clear fluid obtained, negative on cover-slips and culture. For the next three days he had a good deal of tremor. Kernig's sign was present, and there was still some rigidity of the arms and of the neck. The leucocytes ranged from 16,000 to 24,000 per cubic millimetre. On the 14th lumbar puncture was performed for a third time, and a slightly turbid fluid obtained, from which on cover-slips the pneumococcus was obtained. The patient died on the evening of the 14th. The autopsy showed a pneumonia of the right apex, a very slight purulent exudate at the base, some turbid fluid in ventricles, and a small amount of turbid cerebro-spinal fluid, but no positive exudate on the spinal meninges. There was an ulcerative endocarditis of the aortic valve. The pneumococcus was isolated from the meninges, the heart-valves, and from the lung. A very interesting feature in this case was the normal temperature on the 11th, 12th and 13th days of the disease, and the high temperature on the 14th and 15th days, ranging to 105° and 106°.

And lastly, a most important difference between the meningitis complicating pneumonia and cerebro-spinal fever is the almost universally fatal course of the former. Nauwerck describes the complication as invariably fatal, and he is not able to convince himself that in any one of the reported cases of recovery in the literature meningitis was actually present. Netter speaks somewhat more hopefully, and states that recovery may occur. He gives two cases from the literature, both in children. In one, a child of five, in which the crisis occurred on the sixth day, the signs of meningitis were the presence, during the first few days, of headache, unequal pupils, and ptosis. Aufrecht,

[17] Deutsches Archiv f. klin. Med., Bd. xxix.
[18] Archives Générales de Médicine, 1887.
[19] Nothnagel's Specielle Pathologie und Therapie, Bd. xiv.

in his recent monograph,[20] also speaks of the possibility of recovery. Of ten cases of meningitis in 1501 of pneumonia, three recovered. Netter,[21] in his article in the "Twentieth Century Practice," commenting upon the statement by Wentworth that pneumococcal meningitis is always fatal, states that "as early as 1887 I demonstrated, however, that its curability is one of the most evident characteristics of the pneumococcal meningitis." So far as I can gather, there is nothing in his essay to justify such a statement, since, as I have mentioned, he gives but two instances of recovery.

Personally, I have never recognized recovery in pneumonia complicated with meningitis, and the literature of the subject bears out strongly the view that one of the most striking differences between the meningitis of pneumonia and cerebro-spinal fever is the almost invariably fatal termination of the former.

(*b*) ***Pneumococcic Meningitis from Local Infection.*** — Two of the three cases in this group were surgical: one (No. 746) followed removal of the bones of nose and orbit; the other (1,151), a fracture of the base of the skull, involving the cribriform plate of the ethmoid. In both the pneumococcus alone was isolated from the exudate in the cerebral meningitis. In two of Councilman's eight cases the infection followed fracture, in one otitis media. Cases of this group do not so often appear in the medical wards, but last year we were particularly interested in a case in which the infection started from the nose and accessory sinuses, though the possibility has to be considered of extension from the meninges. An abstract is worth quoting:

Anna C., age six (black), admitted March 31, 1898. Her previous history was negative. Five days before entrance, directly after supper, she vomited and complained of headache; later in the evening she became delirious. Two days after the head was held stiffly, and she had much pain in the back of the neck. She had fever, rapid pulse, loss of appetite, and constipation. On admission she was conscious, but very irritable and difficult to examine. The head was arched back and could not be brought forward. The pupils were equal and reacted to light. There was a marked slight internal strabismus. There was nothing of moment found in the examination of the chest and abdomen. She was very tender in the suboccipital region, but there was no sign of disease of the cervical spine. Lumbar puncture on the 1st was negative. For the first week the condition remained about the same; the child could be roused, and answered questions, the strabismus persisted; there were no changes in the optic nerves. The temperature ranged from 100° to 104°. The arching of the head and neck continued; the eyes looked directly upwards. On the 17th a rash appeared, a diffuse erythema over the face, neck and chest, with papules. The rash faded in three days. The temperature ranged from 102° to 104°. On April 19th a profuse, purulent discharge appeared from the nose, which showed the pneumococcus on cover-slips, but in cultures only the staphylococcus aureus grew. She could still be roused; the attitude remained as shown in the photograph. No optic neuritis. Throughout the 18th the temperature dropped from 105° to 97° on the morning of the 19th, and continued about 97° until her death on the morning of the 21st. One of the most remarkable features was the retention of consciousness to within a week of her death.

The autopsy (No. 1,082) showed exudate over the sulci of the hemispheres. The base, from just behind the optic commissure over the pons and lateral lobes of the cerebellum, was covered with a soft yellow exudate. The posterior surface of the spinal cord showed the same. The ventricles were much distended with a turbid fluid. There was suppuration of the mucous membrane of the nose, and of the ethmoidal and sphenoidal sinuses. Cultures showed the pneumococcus in the cerebro-spinal exudate, and from the nasal pus the pneumococcus and the staphylococcus aureus.

(*c*) ***Primary Pneumococcic Meningitis.*** — Future investigations will decide the proportion of cases of primary cerebro-spinal meningitis due to the pneumococcus and to the diplococcus intracellularis; and it will be an exceedingly interesting study to determine whether there are clinical differences such as separate so decidedly the meningitis complicating pneumonia from the cerebro-spinal fever. Judging from the bacteriological records given by Councilman, Mallory and Wright, and those of the Pathological Laboratory of the Johns Hopkins Hospital, the primary pneumococcic meningitis is rare in America — certainly much less infrequent than the secondary forms. Two of Councilman's ten cases, both infants, one of ten months, the other of six days, were primary. I cannot gather from Netter's statistics [22] how many of his cases were *primary;* nor without consulting the original can one say how many of the 13 cases of sporadic meningitis studied by Malenchini (quoted by Netter) belonged to this group. Of our eight cases, as stated, only two were primary. One of these is worth quoting:

G. C., age forty-four (white), admitted at 6.30 P. M. on September 1, 1887, in an unconscious state. When seen by his brother on Saturday, the 29th, he was quite well. After going to bed on Sunday evening, the 30th, he had a severe chill. On Monday he was too ill to go to work. In the evening he became delirious, and ever since has had fever, has been restless, difficult to restrain, and very noisy. On admission the temperature was 105°; the pulse 136 and small. Dr. McCrae saw him a few minutes after he had been put to bed, and took very full and careful notes of the condition. The face was flushed and he looked distressed. There was no strabismus; the pupils were dilated and inactive. The head and neck were held stiffly, and the arms were held firmly flexed on the chest. There were no signs of pneumonia; the heart sounds were clear. The abdomen was not distended, there were no rose-spots and the spleen could not be felt; there were no herpes. The skin had a diffuse mottling, but no purpuric spots were seen. There was no urethral discharge. The leucocytes were 13,500 per centimetre, no alteration in a differential count of 500. The Widal reaction was not present. At 10 P. M. the temperature had reached 106° and he was given a bath at 80°, with ice frictions, which reduced the rectal temperature to 103°. At 11 P. M. the body seemed to be held much more stiffly. At 12 midnight he was much worse, and at 12.40 A. M. he died, about three days and three hours from the time of the initial chill.

The post-mortem (No. 989) showed a diffuse purulent meningitis of the hemispheres; the base much less involved and the ventricles not at all affected. The cord unfortunately was not examined. There was a recent diffuse nephritis, and the urine in the bladder contained albumin and tube casts. There was a general pneumococcus infection, no pneumonia or endocarditis, and the pneumococcus was separated in pure culture from the meningeal exudate.

V. NOTE ON THE TREATMENT OF CEREBRO-SPINAL FEVER.

In our series of cases we have used no special drugs. Morphia has been freely given to control the pain. Ice sponging has been employed whenever the temperature reached above 102.5°. Our mortality, considering that the cases were, as a rule, quite severe,

[20] Nothnagel's Specielle Pathologie und Therapie, Bd. xiv.
[21] Archives Generales de Medicine, 1887, 1., p. 273.
[22] Twentieth Century Practice, vol. xvi, p. 193.

has been low, only 8 of 18 cases in the hospital, and 9 among the 21 cases which I have seen.

I have already spoken of the possible benefits in certain cases of the relief of pressure by the withdrawal of cerebro-spinal fluid.

In two of our cases the spinal canal has been opened, drained and irrigated. Winter,[23] in tuberculous meningitis, removed the spinal process of the second lumbar vertebra and drained the spinal canal. Von Ziemssen first attempted to use local therapeutics to the membranes of the cord by injecting a weak solution of iodine in a case of meningitis; and later Sahli practised permanent drainage through a canula and catheter. So far as I know, an extensive laminectomy had not been done for acute spinal meningitis until our first case, November 6, 1898, in which the operation was suggested and performed by Dr. Harvey W. Cushing, the first assistant in the surgical clinic of my colleague, Professor Halsted. The case has already been given in abstract under the section on bacteriology[24] as the one in which the staphylococci only were present at the time of operation. The spinal canal was thoroughly irrigated with salt solution and a quantity of purulent exudate washed out. No change followed in the existing paraplegia. The bladder and the kidneys became infected, and he died about two months after the operation. The paraplegia persisted. At autopsy the spinal meninges were smooth and looked perfectly normal. It was impossible to say where the dura mater had been incised, and there were neither adhesions nor areas of thickening on the pia-arachnoid. There were extensive changes in the cord itself and in nerve roots.

In Case 12 laminectomy was performed on the 4th day by Dr. Cushing. The patient was very ill, and the spinal symptoms were especially pronounced. A catheter was passed beneath the dura mater, and the membranes drained and irrigated with salt solution. For several days he seemed much better. He developed a hemorrhage, cystitis and pyelonephritis, and died on the sixth day after operation.

Dr. Musser, of Philadelphia, has also had an unsuccessful case. Dr. Rolleston and Mr. Herbert Allingham have reported[25] a case of sporadic cerebro-spinal meningitis in which the patient recovered after laminectomy and drainage. On the principle of a desperate remedy for a desperate disease, the operation (which has been criticised adversely in an editorial note in the *Philadelphia Medical Journal*) seems justifiable in certain severe cases, in which, as in our first case, the spinal symptoms were very marked.

OFFICERS OF THE NEW JERSEY STATE MEDICAL SOCIETY. — At the meeting of the Medical Society of the State of New Jersey held at Allenhurst, June 27th, 28th, and 29th, the following officers were elected for the ensuing year: President, Dr. Luther M. Halsey, Williamstown; Vice-Presidents, Drs. William Pierson, Orange, John D. McGill, Jersey City, and E. L. B. Godfrey, Camden; Corresponding Secretary, Dr. E. W. Hedges, Plainfield; Recording Secretary, Dr. William J. Chandler, South Orange; Treasurer, Dr. Archibald Mercer, Newark.

[23] Lancet, 1891.
[24] Reported in Boston Medical and Surgical Journal, December 29, 1898.
[25] Lancet, 1899

Original Articles.

THE EXAMINATION OF STAINED SPECIMENS OF BLOOD IN ITS APPLICATION TO CLINICAL WORK.[1]

BY HENRY F. HEWES, M.D., BOSTON.

THE utilization of the examination of the blood as an aid to diagnosis in ordinary clinical work is far less common than its value in this regard warrants. This is due primarily, in my opinion, to the almost total inexperience of practitioners in general in the practical application of this method of clinical diagnosis. Most physicians' blood-learning is entirely from the books, and there is consequently an almost total lack of exact knowledge in regard to the appearances of the blood, and the interpretation of these appearances in the various pathological conditions, where they may have special significance.

One cause of this failure of many physicians to acquire this experience in blood examination is an exaggerated idea of the complexity of the methods involved. For this incorrect idea in regard to the complexity of the technique and the amount of labor necessary to obtain the required information from blood examination we have to thank the text-books. In the chapters upon blood examination contained in most of these books, the greatest prominence is given to the description of those methods of work involving the possession of expensive apparatus and the output of much labor, as the blood counts or colorimetric methods, while some of the simpler and much more useful methods, as the examination of a stained specimen, are given but secondary attention, or at least their wide applicability to general work is not indicated.[2]

It is frequently said that the value of the results obtained from a blood examination is in most cases not in proportion to the labor involved in obtaining them, so that the use of the blood examination as a routine method in clinical work is not to be thought of. And this would be true if we had to depend upon all these methods for all our information concerning the blood.

But as a matter of fact such is not the case. A large per cent. of all the information which we can obtain from the blood in a majority of cases can be obtained by the application of a single method, and one so simple in its technique that it can be applied by any practitioner who owns a microscope. This method is the now well-known one of examination of a stained specimen of the blood.[3]

This method has been in the general mind relegated to the use of specialists, and its application confined to the diagnosis of the severe affections of the blood, the severe anemias and leukemias. In reality its use is by no means confined to these conditions. The results obtained from its application may be of value in a considerable number of the common conditions met with in regular practice, as in the disclosure of the existence of an anemia, a leukemia or other form of leucocytosis, or of malaria. And its application is simple to any one who has had training in it.

[1] Introductory lecture to the course in hematology at the Harvard Medical School.
[2] Ehrlich's latest publication upon the subject, "Die Anæmie," is not open to this criticism, as here the study of stained specimens is given due prominence. Die Anæmie: Ehrlich u. Lazarus. Specielle Pathologie u. Therapie, Nothnagel, Bd. viii., Theil 1, H. 1.
[3] There are two kinds of blood staining, the staining of moist films and of dry films; the former is used in histological study, the latter only is used in clinical work.

For this application there is necessary at the bedside simply a few clean seven-eighth-inch cover-slips and a needle, which articles every practitioner can carry regularly.

The blood is spread upon these cover-slips, and dried in the air. The slips are then taken to the office and at any time within a few days fixed by heating at 110° C. for ten minutes or by placing in some fixing solution (as absolute alcohol, alcohol and ether, or corrosive sublimate), and stained.

There are several methods of blood staining which may be used, the special method employed being dependent to some extent upon the special purpose for which the blood is stained. For general work the following modified Ehrlich staining method gives the most satisfactory results for all purposes. The blood, which has been properly fixed, is subjected for four minutes to an Ehrlich three-color mixture, prepared according to the following formula:

Ehrlich-Biondi-Heidenhain, three-color mixture	1.7 grammes
Acid fuchsin	0.05 grammes
Absolute alcohol	2 c. c.
Distilled water	13 c. c.

The specimen is then washed in water and subjected for from one-half second to ten seconds to Löffler's solution of methylene-blue (saturated alcoholic solution of methylene-blue, 30 cubic centimetres, potassic hydrate [1–10,000 solution], 100 cubic centimetres). The specimen is then again washed, dried and mounted in balsam.[4] It may then be submitted to microscopic examination.[5]

In a majority of cases this examination will serve to definitely rule in or rule out the existence of a pathological condition of the blood and to determine the nature of this condition. Then if pathological conditions are found about which more definite knowledge is desired, or if any doubt remains in regard to the blood in the case, the examination may be reinforced or continued by the application of the other methods, the blood counting and the hemoglobin estimation. Otherwise we may rest on the finding of the stained specimen.

[4] The reason for this addition to the original Ehrlich method, this application of an alkaline basic stain following the application of the regular Ehrlich mixture, is as follows: We wish by the stain to bring out a differential staining of the protoplasm of the leucocytes which shall allow of the classification of each leucocyte under one of three headings in accordance with which of the three staining reactions, acid, neutral or basic, it takes. A study of the staining affinities of the constituents of cell protoplasm shows that the acid elements stain more clearly in an acid solution, the basic stain more clearly in an alkaline (often not at all in an acid), the neutral best in a neutral or slightly acid solution. Clearly, all three reactions cannot be brought out to the best advantage by the use of a single staining mixture, since this cannot be both acid and alkaline. At best a single mixture can be neutral, and in a neutral mixture the basic elements of the protoplasm do not stain strongly enough. The original Ehrlich mixture has a neutral or slightly acid reaction. It can be used, therefore, for obtaining the neutral and acid reactions in the leucocytes, and is in fact the best neutral staining mixture that we possess. It is not so useful, however, for the obtaining of the basic protoplasm reactions, but frequently fails entirely to bring these out (H. F. Hewes: Classification of the Leucocytes, Journal of Boston Society for Medical Sciences, February, 1898). To bring out these basic reactions as strongly as the others in our blood, we, therefore, apply separately a basic stain in alkaline solution. See in this connection A. Matthews: Chemistry of Cytological Staining, American Journal of Physiology, vol. 1, No. 4. This author shows that one of the chief constituents of cell protoplasm, albumin, stains with basic stains strongly in an alkaline solution, but faintly, or not at all, in neutral or acid solutions.

This is one of several illustrations of the principle upon which the modified Ehrlich method is based, the principle that the affinity of cell elements for a given stain is dependent upon the reaction of the staining solution.

In addition to thus aiding in the differentiation of the leucocytes this modified method has the further advantage over the old method that it makes the distinction between nucleated red corpuscles and basophilic leucocytes (lymphocytes) much more clear, also that it stains malaria organisms.

[5] For the microscopic examination a one-tenth or one-twelfth oil immersion lens should be used. With practice a seven Leitz, or any lens of corresponding power, can be substituted for the immersion, but observation with the higher power is much more satisfactory.

For the application of this method of the study of blood to clinical work there is necessary, besides a certain facility in this process of preparation of the specimens, a certain amount of training in the examination of specimens of normal and pathological blood prepared by this method.

The first requisite is a thorough familiarity with the appearance of stained specimens of normal blood. If we study a good stained specimen of such blood we shall see that the specimen contains two forms of corpuscular elements, the red corpuscles, which are round, yellow-stained, disc-shaped plastids, and the white corpuscles, which are nucleated, granular cells taking varieties of stains according to their kind. The red corpuscles will be practically all of a round or slightly oval shape, of a uniform size, the diameter varying from 6 to 9μ, and of the same intensity and reaction in color. The centre of each corpuscle will appear as a white zone of a definite size.

This uniformity in shape, size, color reaction, and in the size of the white centre of the red corpuscles is a striking and important characteristic of a specimen of normal blood. It is so regular that a general lack of such uniformity in a given specimen may in itself be taken as conclusive evidence of the existence of a condition of anemia. A few degenerate forms will of course be found in every specimen, since there are always some corpuscles dying and disintegrating in normal blood, but they are so few as to be scarcely noticeable. The uniformity is maintained of course only in fields where the spreading is perfect. In parts of every cover-slip there will be seen corpuscles of irregular form, without the white centre or biconcave appearance. These are simply the results of injury in the method of preparation of the specimen. They are flattened or all drawn out in one direction, and can easily be distinguished from corpuscles which are naturally abnormal.

The white corpuscles appear as granular nucleated cells of varying size, but as a rule larger than the red corpuscles. The number of these white corpuscles upon a full thin spread in which the red corpuscles lie separately will vary, corresponding to the number in blood and the thickness of the spread. An average normal specimen contains 200 to 400. The comparative frequency of these leucocytes in normal slides becomes fixed in the mind after some experience in this examination, so that one can judge with fair accuracy from running over one of these slides whether the number is normal or increased in the blood. One may even by a careful count of fields measured by a measured eye-piece form an accurate estimate of the actual proportion of the white corpuscles to the red and consequently, unless the red corpuscles show evidence of marked anemia (which would suggest a diminution in their number), an estimate of the actual number of leucocytes in the blood.

Three varieties of white corpuscles can be distinguished, the basis of distinction being the staining reaction of the protoplasm when subjected to a triple stain.[6]

These three varieties are named respectively neutrophiles, basophiles and oxyphiles in accordance with the neutral, basic or acid stains of the granules or structural substances contained in their protoplasm.

The most common form will be a cell usually two or three times the size of a red corpuscle, containing a

[6] A stain containing active basic, neutral and acid principles.

blue polymorphous neucleus — often *apparently several* nuclei, surrounded by a protoplasm studded with small irregularly-shaped lilac-colored granules — the so-called *neutrophile:* the *polymorphonuclear neutrophile* — the *polynuclear neutrophile.*

The next form in point of frequency is a cell varying in size from that of a red corpuscle to four times this size, containing a blue, usually round nucleus surrounded by a protoplasm studded with fine blue granules — the *basophile.* In this class are included the lymphocytes, large mononuclear transitional forms, and mast cells of Ehrlich.

The third form is a cell of the size of the neutrophile, with a blue polymorphous nucleus and a protoplasm studded with granules of large size, regular and a golden-red color — the *oxyphile,* the so-called eosino phile.[7]

If these white cells are counted differentially as neutrophiles, basophiles and oxyphiles, it will be found that the three varieties are present in certain definite proportions in normal blood. Thus if enough cells to make a fair average be counted, say 500 or 1000, 60 per cent. to 75 per cent. will be neutrophiles; 20 per cent. to 35 per cent. basophiles; ½ per cent. to 5 per cent oxyphiles.

These limits in the differential proportion of the leucocytes hold for adults only. In children under ten years of age the basophiles are more and the neutrophiles less numerous.

These characteristics of normal blood which we have described are constant. Any general variation from them in a blood specimen is a sign of abnormality. When, therefore, the picture of the normal specimen and its limit of variation are once fixed in the mind, the determination of whether the blood in a given case is normal or abnormal is, as far as the appearance of its corpuscular elements goes, a simple matter.

Thus if the red corpuscles of our specimen are pale and their centres larger than our normal type, or if the characteristic uniformity in size or shape be lacking, we are at once aware that the blood in hand is not normal; or if the leucocytes are more numerous upon our slide than the rule, or the differential proportion not regular, we come to the same conclusion.

Having determined this fact, that some abnormality is present, the next point is to determine the particular significance of the special blood picture in hand. To establish this point, some experience in the study of the appearances of blood in pathological conditions is necessary. As a result of this study we find that the changes which occur in corpuscular elements of blood in disease may be divided into two classes:

(1) Changes in the characteristics of the red corpuscles, their number, or structure, or color richness, staining reaction, etc.

(2) Changes in the characteristics of the white corpuscles, their number, differential proportion or type.

The changes of the first class are expressions of a general condition known as anemia.

The changes of the second class are, as far as their value in diagnosis goes, expressions of a general condition known as leucocytosis.

Practically, therefore, the study of the pathology of the blood corpuscles means a study of the anemias and the leucocytoses.

[7] The appearances of these leucocytes here described are those present when they are subjected to the special method of triple staining described in this paper, p. 30.

Anemia, as the term is used from a clinical standpoint, means any loss of corpuscular substance in the red corpuscles. Such a loss of substance is of course associated with some changes in the structure or number of the corpuscles. Such a change involves as a direct result some alteration in the appearance of the corpuscles. The consequent loss of functional capacity of the blood or the disturbance of the blood-forming centres may result in the appearance of new and strange corpuscular forms in the blood.

For purposes of clinical work these changes which occur in the corpuscles in anemia and the abnormal forms which result from them may be to some extent classified.

(1) We have the diminution in the hemoglobin content of the corpuscles, as evidenced by the paleness of the corpuscles and the increased size of their white centres. This is called *achromia* and the changed corpuscles are achromic forms.

(2) We have the abnormal variation in the shape and the size of the corpuscles, evidenced by the appearance of pear-shaped, oval or triangular forms, of corpuscles smaller and larger than normal.

This condition is known as *poikilocytosis* and the irregularly shaped and sized forms are known as poikilocytes. Some observers divide the poikilocytes into three classes. All forms of a size under the normal limits are called macrocytes, all over these limits macrocytes, while the term poikilocytes is retained for the forms of abnormal shape alone. Such a division may be of use for purposes of instruction, but for practical work it is necessary to recognize simply the presence or absence of the condition of poikilocytosis, the degree of this condition, and whether an average increase or decrease in size of the corpuscles is a prominent feature of this poikilocytosis.

(3) There are forms in which the stroma of the corpuscles has in addition to its normal acid-staining elements, elements taking the blue basic or purple neutral stain. These are called polychromatophiles.

(4) There are forms not necessarily coming under any of the above headings, in which the stroma appears disintegrated and coloring matter irregularly distributed.

Many of these forms thus classified represent corpuscles which have undergone some process of necrobiosis or degeneration. Such are the achromic forms in which the normal content of hemoglobin is lacking, or the misshapen poikilocytes and small microcyte fragments, or the polychromatophiles, and some of the large macrocyte forms.

Some of these forms of abnormally large size may, however, represent not degenerate forms but corpuscles produced as the result of an abnormal process of regeneration which occurs in the blood-forming centres as the result of pathological changes. Such are perhaps the large corpuscles which occur in so great numbers in pernicious anemia, associated with the megaloblast.

(5) In addition to these evidences of degenerative changes of red corpuscles, this poikilocytosis or achromia, which we find in anemia, there are certain other varieties of red cells abnormal to the circulating blood, which we find in certain pathological conditions, principally those associated with marked anemia. These are the nucleated red corpuscles or *blasts.* These blasts appear, as they are, as red corpuscles containing one or more nuclei. In stained specimens

the stroma takes the golden acid stain peculiar to the red corpuscle, the nucleus, the blue basic nuclear stain peculiar to all nuclei.

The blasts which are found in pathological blood may be separated into three varieties:

(1) We have *normoblast*. This is a cell of the size of the normal red corpuscle, consisting of a stroma containing hemoglobin, staining golden color, containing one or more compact homogeneous deeply bluish-black staining nuclei. The nucleus is as a rule single, lies sometimes excentrically, sometimes concentrically, occupying from one-fourth to three-fourths the whole corpuscle. Its stain is much deeper and more homogeneous than that of the nuclei of white corpuscles.

(2) We have the *megaloblast*. This is a red cell of a size larger than normal, containing one or several nuclei.

The color of the stroma is as a rule less intense than that of the normoblasts. The nucleus stains blue; as a rule it stains less deeply than that of the normoblast and less homogeneously, showing a chromatin network in its substance. It may occupy from one-eighth to three-fourths of the cell. Its compact form and clear demarcation from the surrounding stroma serve to distinguish it from the nuclei of white corpuscles.

(3) *Microblasts* are nucleated red cells of a size smaller than the normal. The nucleus takes the deep color of that of the normoblast and has but little stroma about it.

The normoblast is the parent cell of the red corpuscle. It is found in great numbers in the red marrow of the bones, but never in health after the first year of life in the circulating blood. In the marrow it gets rid of its nucleus by absorption (Papenheim) or extrusion (Ehrlich) and appears in the blood as the normal corpuscle.

The megaloblast is not found in the red marrow of the normal individual. It is found in the marrow and blood-forming centres of the embryo and represents a stage in the formation of the red corpuscle here, as does the normoblast in extra-uterine life.

Blasts are found in the blood principally in conditions of anemia. They may, however, occur in the blood of conditions in which there is some lesion of the blood-forming centres, as the leukemias, even where no evidences of anemia, that is, of degenerative corpuscular changes, are apparent. The presence of blasts in an anemia suggests a severe or an advanced condition or type, an anemia in which the loss of corpuscular substance is so great as to call for very active regeneration processes in the blood-forming centres. When the blasts are exclusively normoblasts we have an evidence that regeneration is proceeding in an excessive but normal manner. When megaloblasts are present, however, we have evidence that the blood centres have reverted to some extent at any rate to the embryonal method of blood formation.

This evidence of reversion is always a sign of serious significance. The chances of recovery of an anemia in which this change has occurred are, independently of the cause of the anemia, less than those of an anemia in which regeneration is still taking place according to the normal type. Owing to this difference in the significance of the normoblast and megaloblast their differentiation in the blood becomes a matter of great importance. As a rule it is simple, if the characteristics of the two cells, the size, the homogeneous deep-colored nuclei of the normoblasts, or the rich in chromatin structure, lighter-colored nuclei of the megaloblasts, be held in mind. Where the size or the structure leaves one in doubt, the associated conditions of the blood may be of aid. The megaloblasts are commonly associated with an average increase in the size of the red corpuscles of the blood, with the presence of numerous macrocytes. So true is this association that the fact of finding a general increase in the size of the red corpuscles always leads one to suspect and look for a megaloblast anemia.

Any or all of these pathological varieties of red corpuscle, these blasts and degenerative forms may be present in an anemic blood. By studying the general picture in a given case and sorting out the varieties of changes present, we can establish not only the existence of an anemia but also the severity and type of anemia present. This differential study we shall take up later.

(To be continued.)

X-RAY EXAMINATIONS IN CHILDREN.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

In one of my early articles,[1] "The Adaptation of the X-Rays to Medical Practice," I pointed out the value of x-ray examinations in young patients, and further experience with them urges me to emphasize the usefulness of this method still further. Children and infants are more easily penetrated by the x-rays than adults, and like older persons may be readily examined without removing the clothing, as they lie on the stretcher in front of the apparatus. Infants often go to sleep while on the stretcher and may be then examined with the fluorescent screen or an x-ray photograph may be taken without disturbing them. Not only is the thorax of children more accessible to this method of examination than that of adults, but so also are the abdomen and head. In examining the thorax indeed care must be taken to avoid too much light, for the organs in the chest of a young child are so easily traversed by the rays that otherwise the border of the heart, for instance, might not be well defined because the edges are penetrated by the rays and if so the shadow of the heart cast on the screen would be smaller than the heart itself.

In some cases of pneumonia, especially in the early stages, we cannot detect the presence of pneumonic areas in infants and children, nor in adults, and in these cases a doubtful diagnosis may be made more certain by an x-ray examination. For example, I recall a child, six years old, in one of the wards of my service at the Boston City Hospital, with a high temperature, a leucocytosis (25,000), pain and stiffness in the back of the head and neck, the neck so rigid it could not be flexed. There was no history, and no physical signs were found in the chest after a careful examination by two admitting physicians. My house physician also found nothing in the lung, and I was inclined to accept the diagnosis of cerebro-spinal meningitis which had been made by the three physicians who had seen the patient. I made an x-ray examination, however, in order to obtain further information,

[1] Medical and Surgical Reports of the Boston City Hospital, January, 1897.

and found a dark area over one lobe and a shortened excursion of the diaphragm on that side, and the diagnosis of pneumonia was made without hesitation. This diagnosis was confirmed by a marked crisis, and rapid clearing of the lung, as determined by x-ray examinations. At no time during the course of the disease did I obtain signs of consolidation by auscultation and percussion.

Again, in young patients with symptoms which suggest tubercular meningitis it may be desirable to have a careful x-ray examination of the lungs, with a view to determining whether or not tuberculous foci exist there.

In pleurisy, with effusion or empyema, the x-rays assist very much in the diagnosis; any condition of the lung which would make this organ less penetrable by the rays than normal, or where the excursion of the diaphragm might be changed, would be easily observed. Changes in the size, position or shape of the heart — and some of these conditions are not readily detected by the usual physical examination — are very definite and patent to the x-rays.

The size and position of the liver and spleen are more readily determined in children than in adults; likewise the size and position of the kidneys, especially the left one.

The size of the stomach, by giving subnitrate of bismuth with bread and milk, may be determined, and the changes in size and shape after a meal may be followed. The changes in the size and shape of the stomach of a child have thus been watched during the process of digestion by Mr. W. B. Cannon and myself. These observations are still unpublished.

In a word, I wish to direct attention to the advantages which young patients offer to this method of examination, in the hope that it may assist in arousing more appreciation of its usefulness, not only in examinations of the thorax but also in ascertaining more exactly the conditions present in other parts of the body.

There need be no fear of untoward effects from x-ray examinations if simple precautions are taken. I have never had any in the about three thousand examinations that I have made.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SECTION ON SURGERY AND ANATOMY, COLUMBUS, O., JUNE 6, 7 AND 8, 1899.

THE first session of the Section in Surgery of the American Medical Association was "appendicitis day," there being eight papers read upon that subject.

In the address of the Chairman, DR. W. J. MAYO, of Rochester, Minn., upon

CICATRICIAL STRICTURE OF THE ESOPHAGUS AND ITS SURGICAL TREATMENT,

the author said that esophageal obstruction was a subject that must command the attention of every thoughtful surgeon; that the inaccessible situation of the gullet, its relation to important structures and the difficulty attending manipulations within its narrow lumen, all tend to place it among the surgical problems difficult of solution.

CONSIDERATIONS ON THE DIAGNOSIS AND TREATMENT OF GALL-STONES.

DR. JOSEPH RANSOHOFF, of Cincinnati, read a paper on this subject. He said that cholecystotomy was first done by Boggs in 1868, and that it was not made a formal operation until ten years later by Marion Sims. Concerning the etiology of gall-stones comparatively little is known, and experiments made to produce them around foreign bodies introduced into a normal gall-bladder had almost always failed. Gall-stones present but few varieties, the vast majority being formed either by pure cholesterin or of bile pigments. Cholecystenterostomy had a limited field of application, that is, obstructive jaundice from malignant disease or impermeable cicatricial stenosis of the common duct.

DR. A. J. MCCOSH, of New York City, read a paper entitled

OBSERVATIONS ON THE TREATMENT OF GALL-STONES.

He said that it was believed by many that so-called biliary colic was not produced so much by the passage through or impaction of a calculus in the bile passages as by inflammation of the gall-bladder and ducts, and that as long as the bile and the biliary passages remain normal a gall-stone would, as a rule, produce but few symptoms. He thought that one stumbling-block which was often found in the path towards a correct diagnosis was the idea that if a stone was impacted in the common duct the result would be a distended gall-bladder. His paper was a very exhaustive one and dealt at length with the citation of individual cases.

In discussion, DR. WALKER, of Detroit, spoke of drainage, and said that in his operations of late he had been in the habit of closing the gall-bladder and letting it fall back into the abdomen. He had no trouble in utilizing the purse-string suture.

DR. BEVAN, of Chicago, thought that a great deal was known of the etiology of gall-stones; that he always looks for a history of typhoid or intestinal infection, and that in a number of cases he had found typhoid bacilli in the gall-bladder of patients. He advised the S-shaped incision, which he had previously reported.

DR. MORRIS, of New York, illustrated a method of closing the gall-bladder.

DR. MURPHY, of Chicago, Ill.; DR. FERGUSON, of Troy, N. Y.; DR. THOMAS, of PITTSBURG, Pa.; DR. PORTER, of Fort Wayne, Ind.; DR. WARREN, of Columbus, O.; DR. RODMAN, of Philadelphia; DR. MOORE, of Minnesota; and DR. MARCY, of Boston, followed in discussion.

DR. W. E. B. DAVIS, of Birmingham, Ala., reported a case of obstruction of the gall-bladder and common duct, in which a stone was not found, occurring in a pure negro, age seventy.

DR. A. J. OCHSNER, of Chicago, read a paper on

APPENDICITIS AS A CAUSE OF INFLAMMATION OF THE RIGHT OVARY AND TUBE.

He said that during the past five years surgeons had frequently observed the fact that appendicitis might occur in patients suffering from an inflammatory condition of the ovaries and tubes; that most of these observers had found difficulty in making a differential diagnosis. He was of the opinion that appendicitis was frequently the cause of inflammatory disease of the right ovary and tube, and occasionally the left, and

that such a condition was likely to give rise to a chronic invalidism, owing to the periodic exacerbation resulting from congestion due to menstruation; that in operating for chronic or recurrent appendicitis in patients suffering also from dysmenorrhea the right ovary and tube should be examined.

COMPLICATIONS AND SEQUELÆ OF APPENDICEAL ABSCESS.

DR. JOHN B. DEAVER, of Philadelphia, read this paper. He said, in part: Of all the complications of appendicitis, peritonitis, that dreadful disease which has and is to-day carrying many a human soul into eternity, stands foremost in frequency and mortality. One, if not the most, distressing sequel of appendiceal abscess is a fecal fistula. The surgeon is too frequently held accountable for this terrible condition. I style it terrible, for I know no word that can better express it. Gentlemen, I repeat to you, appendicitis with pus-formation produces ravages of the worst description, the effects are often permanent and irremediable, and in my experience unequalled by any other affection occurring within the abdominal cavity. For me the lesson taught by the widespread disastrous lesions of appendiceal pus was long ago learned. In fact, these very complications but accentuate the necessity for early operation to usher in that prevention which is indeed cure. Would that my voice were strong enough to sound the note of warning against delay in the presence of appendiceal pus, its ravages, etc., from the Atlantic to the Pacific and far beyond, and from the Everglades of Florida to the glaciers of Alaska.

DR. ROBERT MORRIS, of New York, read a paper on

BAD METHODS IN APPENDICITIS.

He said: I say, shame upon any member of the profession to-day, no matter who he is or where he lives, who allows an appendicitis patient to become a chronic invalid and unfit to follow any occupation, provided he is in reach of intelligent resources.

ANATOMY AND BIOLOGY OF THE PROCESSUS VERMIFORMIS.

DR. G. G. EITEL, of Minneapolis, read this paper by title.

DIAGNOSIS AND TREATMENT OF APPENDICITIS, WITH REPORT OF 102 CASES.

DR. MEANS, of Columbus, read this paper. He said that of the 102 cases reported 45 were in females and 57 in males. In 9 cases operation was made within twenty-four hours after the attack. It had been his observation rather than his experience that when there was profound septicemia, complete paresis of the bowel, with a pulse-rate entirely out of proportion to the temperature, an operation was useless. He believed that few diseases had a more uniform set of symptoms than appendicitis. He further stated that the controversy that has been waged during the last decade as to whether appendicitis should be classed as a medical disease, a mixed disease, or a surgical disease, has been decided largely in favor of the surgeons. He maintains that it is the consensus of opinion of the profession to-day that appendicitis is essentially a surgical disease, and should be treated from that standpoint. He did not believe that the time for operation depended altogether upon pathologic conditions as found in the patient at the time of the first visit. Early operations gave the best results.

DR. WILLIAM H. HARSHA, of Chicago, considered

INQUIRIES IN THE ETIOLOGY AND TREATMENT OF APPENDICITIS.

He thought that among the etiologic factors was age, appendicitis being essentially a disease of the young. A study of 157 cases occurring in some of the Chicago hospitals during the past year shows an average of twenty-six years, the oldest patient having been sixty-two and the youngest one and one-half years old. Continuing, he said: The greater frequency in males is no doubt due to their greater exposure to injury, fatigue, colds and over-indulgence in eating and drinking. The seasons affect materially the frequency of attacks, the greater number occurring during the summer months.

In discussion, DR. KEEN, of Philadelphia, said, in part: Dr. Deaver, if I understand him rightly, considered a general suppurative peritonitis is a contra-indication to operation. The very fact that a patient has a general purulent peritonitis as a result of appendicitis means to me instant operation and thorough operation, for this very reason, that if you let such a patient alone he is just as absolutely sure to die as he is sick; that the majority of those who are taken with a suppurative peritonitis will die, operation or no operation, is certainly true, a majority of them, but every one rescued is rescued from the grave, and that those cases are not without hope I am absolutely certain, both from reading and from experience, for I could recount at least four or five cases in my own practice, in which life has certainly been saved simply by the ordinary operation for appendicitis and by an operation on both sides, which would allow thorough flushing out, complete cleansing of the abdomen as far as can be done.

DR. MURPHY, of Chicago, then took the floor, and in a question-and-answer form discussed with DR. KEEN the time for operating in all appendicitis cases.

Eventually many interested members joined in a lively discussion. They were: DR. LEWIS, of Kansas City; Dr. GRANT, of Denver; DR. JOHNSON, of Hartford; DR. WAGNER, of Chicago; DR. LAPLACE, of Philadelphia; DR. PORTER, of Fort Wayne.

DR. EMIL RIES, of Chicago, Ill., read a paper entitled

SOME RADICAL CHANGES IN THE POST-OPERATIVE TREATMENT OF CELIOTOMY.

In the animated discussion which followed, interesting points were adduced by DR. MANLEY, of New York, and DR. BONNAFIELD, of Cincinnati.

SECOND DAY.

DR. A. I. BOUFFLEUR, of Chicago, Ill., read a paper on

DERMOID FIBROMA OF THE ABDOMINAL WALL AND PLASTIC OPERATION FOR SUCCESSFUL REPAIR OF DEFECT CAUSED BY ITS REMOVAL.

OBSERVATIONS ON PREVENTION OF SURGICAL SHOCK AND COLLAPSE, BASED ON CLINICAL AND EXPERIMENTAL EVIDENCE.

DR. GEORGE W. CRILE, of Cleveland, O., read this paper. He said: Experimentally, as well as clinically, the brain cannot withstand long pressure; it produces shock by interference with the vasomotor system. Collapse may be produced on the brain by direct press-

ure, and interference with respiratory centres, which it has been shown are located on the base. In operations on the brain, in the presence of abscess or hemorrage, or in the presence of intracranial pressure, it is necessary to give the patient a hypodermic injection of atropia. It guards the heart against the inhibitory action of the vagi. In operations on the neck he stated that experimentally he had been able to show that when the laryngeal mucosa had been subjected to treatment of cocaine, this drug had an absolutely inhibitory effect on reflex action; that in any given case of operation on the neck, if the patient is given physiologic doses of atropia before the operation is begun, and if at the same time the laryngeal mucosa is properly treated with cocaine, it is impossible, as long as these drugs have their effect, to produce collapse in any such operation. In reference to opening joints, Dr. Crile said that, as a matter of fact, there is no nerve supply in a joint that is capable of producing collapse or shock to a great degree, but that the shock produced in operations on the extremities was caused by cutting of nerve tissue, a large nerve trunk — a great bungling; sawing through the anatomic bone with the periosteum intact produces but a small amount of shock.

In discussion, DR. LEAVING, of Milwaukee, said that in the matter of prevention of shock the physical and mental condition of the patient preceding the operation and at the time of operation was of importance; patients should be in the best possible condition. He was in the habit of putting his patients for two or three days before an operation under the influence of strychnine, because of its support to the heart during the time of operation and to the nervous system and heart subsequently. He thought also that the rapidity of the operation was a large factor.

DR. ALLEN, of Cleveland, thought that as little time as possible should be lost in the operation and that as little blood as possible should be lost. He believed that temperature was an important element. He recited some interesting experiments performed on dogs in a very warm room.

DR. O. OCHSNER, of Chicago, mentioned, as other factors in shock, traumatized tissues, superfluous number of stitches, the unnecessary manipulation of the tissues.

DR. BULLETT, of Louisville, presented a differentiation between traumatic shock or shock arising from railroad injuries and that caused by hemorrhage or loss of blood incident to accident.

DR. MURPHY, of Chicago, said that the operator who makes a clean, rapid operation, without injury done, without traumatism, is the operator who takes his patient off the table in a good condition.

DR. DAN MILLIKEN, of Dallas, Tex., referred to a brother practitioner in Sherman, who found that thoroughly washing out the stomach, or performing lavage, thus removing all mucus or foreign material, lessened to a great extent the amount of shock.

DR. ARTHUR D. BEVAN, of Chicago, read a paper on

OPERATION FOR UNDESCENDED TESTICLE AND CONGENITAL HERNIA.

He said that the malposition of the testicle is often complicated with hernia, and hernia of a very dangerous and distressing type. When the testicle is retained high up in the abdomen and does not reach the internal abdominal ring, a hernia is not very apt to coexist, but in one-half of the cases when the testicle is in or about the inguinal canal a hernia is present. It is difficult to retain such a hernia with a truss, because the pressure upon the testicle is unnatural, and such pressure is apt to produce traumatic inflammation of the organ. A retained testicle in or about the inguinal canal is peculiarly liable to injury, both external injury from its exposed position, and also injury from bodily movements, exercise of any kind in which the abdominal muscles are strongly contracted, sneezing and coughing. He had had one case in which the patient was compelled to remain in bed whenever he had a slight cold because the pain of coughing and sneezing was excruciating.

Why should we refuse the cryptorchid the benefits of a surgical procedure which, if properly done, is as safe and sure as a Bassini hernia operation, and which is of much more value to the individual, both from a physical and mental standpoint? He desired to refer to the best method of handling the vaginal process of peritoneum in operations for congenital inguinal hernia. He had until recently been in the habit of obliterating the vaginal process in these cases by a purse-string suture at the internal ring, and by whipping up the peritoneum around the cord with a continuous catgut suture, leaving enough to form a tunica vaginalis. In a careful dissection of a case of inguinal hernia he found that when, as it was very difficult to separate the vaginal process from the cord proper, he opened widely the inguinal canal, so as to expose freely the internal ring, he could very easily separate the peritoneum from the cord, just where the cord separates into its constituent elements, where the vas turns inward and downward and the spermatic vessels pass upward. Here he could readily separate and cut off the vaginal process and close the abdominal cavity, as in treating the sac of an acquired hernia. Further, he found that by following the vas and spermatic vessels inside of the abdominal cavity with his finger, and freeing them from the peritoneum covering them, he could pull them a surprisingly long distance out of the abdominal cavity. Since that time he had had an opportunity of operating on four cases of congenital inguinal hernia, which he had handled in this way: An incision three inches in length was made over the inguinal canal. He then proceeds by splitting up the entire length of the canal, exposing freely the internal ring, opening the vaginal process, freeing the vaginal process high up, where the vas and spermatic vessels separate, ligating the vaginal process with catgut at the internal ring and dividing a half-inch below the ligature. Then, without stripping the vaginal process from the entire length of the cord and without removing any of it, he continued by throwing a catgut ligature around it and ligating so as to close it, forming a large tunica vaginalis.

In discussion, DR. MILLIKEN, of Dallas, TEX., thought the operation for castration should be performed from eight to ten years of age; that fifteen was a little too late.

DR. LORD, of Omaha, reported a case of metastatic inflammation of the testicle.

DR. HARRIS, of Chicago, thought the two factors involved were (1) the necessity of an operation; and (2) the functional capacity of the organ. He did not think it was advisable to operate these cases previous to the age of puberty. He had removed a number of

testicles, and in cases over twenty-five no living spermatozoa could be found.

Dr. McArthur thought that no testicle should be extirpated until extraperitoneal reposition of that testicle had been tried.

Dr. Shaffer, of Chicago, was of the opinion that the operation for castration should not be performed until the age of puberty.

Others who took part in the discussion were Dr. Bouffleur, of Chicago; Dr. Manley, of New York; Dr. Reed, of Rock Springs, Wyo.

The morning session closed with the reading of a paper by Dr. Elliott, of New York, entitled

CONTRIBUTION TO THE TREATMENT OF SPINAL CARIES.

The afternoon session opened with two papers on

EXSTROPHY OF THE BLADDER.

Dr. Dudley A. Allen, of Cleveland, in his paper, said: All methods which have been introduced for the formation of a covering for the exposed mucous membrane of the bladder have two objections. The first is, that although by covering the exposed mucous membrane they preserve it from external circulation, they do not prevent the escape of urine. This escapes and soils the patient exactly as it did before the operation. The method which Maydl proposed, and the one which I have adopted in the present case, is to remove all of the exposed mucous membrane of the bladder except that which is immediately around the openings of the two ureters. After this has been done the abdomen is opened, the ureters are mobilized and the sigmoid flexure is drawn from the abdominal opening. A longitudinal incision is made into the intestine and the extremity of the ureters with their mucous covering is inserted into the sigmoid and made fast by a series of sutures. When this has been done the intestine is dropped backward into the abdominal cavity, and the abdominal cavity is closed. Up to the present time it seems to me that no method proposed gives as much relief as that used upon the patient whom I present to you to-day.

Dr. C. A. Wheaton, of St. Paul, read a paper by the same title. The doctor recited a case of hypospadias with rudimentary penis, a case of epispadias without exstrophy of the bladder, and a case of aggravated epispadias with exstrophy of the bladder, upon whom he had operated, Two patients were exhibited, showing satisfactory results.

The discussion on the two papers was opened by Dr. Rudolph Matas, of New Orleans. He thought that the surgical history of exstrophy of the bladder was a fair reflex or mirror of the progress accomplished in surgery, that the cure of ectopic vesicæ was a problem that had confronted and vexed the surgeon for nearly a century; the ancients simply referred to this condition and described it; to them it was a hopeless state. He pointed out that all the autoplastic methods proposed for the cure of exstrophy of the bladder are unsatisfactory and at best simply palliative; that of all the radical methods which involve an incision of the bladder and a transplantation of the ureters to the rectum, Maydl's operation is by far the most complete, rational and satisfactory from the technical point of view; that Maydl's operation offers the best conditions for the complete correction of the associate epispadias; that it should not be applied indiscriminately to all cases, but only to those patients whose general condition is such as to warrant a long, tedious operation likely to be attended by serious shock, and whose eliminating organs, especially the kidneys, are normal and capable of effective elimination.

Dr. DeForest Willard, of Philadelphia, Dr. J. Rilus Eastman, of Indianapolis, Dr. W. J. Means, of Columbus, O., and Dr. D. P. Allen, of Cleveland, joined in the discussion.

Dr. J. E. Moore, of Minneapolis, read a paper entitled

TUBERCULOSIS OF FASCIA.

He said that every surgeon was familiar with tuberculous fascia, secondary to disease of the glands, bones and joints, but in these cases the communicating sinuses are found, and the relation between the disease of the fascia and the gland, bone or joint is easily established. He said he had a history of a number of cases in which there was no disease of the gland, bone or joint, and in which there was extensive disease of the fascia. The symptoms of fascial tuberculosis are a slowly developing swelling, accompanied by little or no pus, and a local rise of temperature which can be detected by a sensitive hand. The diagnosis is to be made largely by exclusion. In the majority of cases the disease is secondary as well as primary. The prognosis varies with the variety, the location and extent of the disease. Treatment consists in thoroughly removing every trace of the disease with knife, curette and scissors. He gave the history of six cases.

In discussion, Dr. Willard, of Philadelphia, thought that Dr. Moore had struck the proper method of procedure in tuberculosis of the fascia, when there is no implication of the bone, by laying open the sinus.

Dr. Sherman, of San Francisco, spoke of the x-ray in connection with diagnosing conditions.

Drs. W. W. Keen and W. S. Jones contributed the next paper, which was entitled

TWO NOVEL CASES OF SURGERY OF THE TRACHEA: (1) STRICTURE OF THE TRACHEA SUCCESSFULLY REMOVED BY OPERATION; (2) SUCCESSFUL REMOVAL OF A DIAPHRAGM IN THE TRACHEA FOLLOWING CUT-THROAT AND PRODUCING APHONIA.[1]

In discussion, Dr. Crile, of Cleveland, thought Dr. Keen's case highly interesting, and reported a case of stenosis of the larynx under his observation.

Dr. Wyman, of Cleveland, said: I would like to know whether a more careful and painstaking suturing primarily of the case might not have averted the conditions that culminated in the operation by Dr. Keen?

Dr. Keen said: In reply to Dr. Wyman, I beg to say that I did not refer to the early treatment of this case simply because it was under the care of other surgeons. Dr. Jones and I never saw the case until more than a year after the cut-throat. I presume this little accident is quite as frequent in Philadelphia as in Michigan, and we try, in these cases, when we meet with them early, to repair the damage with immediate suture, as has been properly indicated by Dr. Wyman. In answer to Dr. Crile's question as to cicatricial stenosis, I should think that if the opening

[1] Philadelphia Medical Journal, p. 1,295.

between the vocal chords is completely cicatrized there would be no great probability of any progressive stenosis. If there were, it could be readily met by reintroduction of the tube.

DR. M. L. HARRIS, of Chicago, Ill., read a paper on

LONGITUDINAL SILVER-WIRE SUTURE IN THE CLOSURE OF WOUNDS.

I cannot speak too highly of the longitudinal silver-wire suture in the radical operation for hernia, as the results have been so gratifying. There are no absorbable sutures to soften nor no absorbable sutures to come out at some future time. Another advantage is its rigidity; it can always be sterilized; does not convey infection to the deeper tissues; edges of wounds are more coapted than by any other method; the narrow linear cicatrix is a great improvement in a cosmetic sense; the suture will withstand any desirable amount of traction without yielding; it is easily applied.

In discussion, DR. LORD said that he had discarded the deep silver-wire sutures, and that he was using silkworm-gut and catgut for superficial skin-wound closures.

DR. MEANS, of Columbus, mentioned a new material for suturing wounds — annealed steel wire, galvanized, and said it was very economical.

In answer to a question by DR. EGGLESTON, of Seattle, as to whether the silver wire was as easily removed as silkworm gut, DR. HARRIS replied that it was.

DR. J. C. MUNRO, of Boston, read a paper on

LAMINECTOMY, WITH REPORT OF CASES.

In discussion, DR. FERGUSON, of Chicago, said he thought that laminectomy was a very major procedure for the amount of good obtained.

DR. BOUFFLEUR, of Chicago, believed that shock was no contraindication to laminectomy; on the contrary it was a positive indication. He did not believe that presence of sensation accompanied by paralysis is a contraindication to operation. He said: The last case I had to recover, which was a year ago last September, was one in which sensation was present, but upon exposure of the cord we found a spicula of bone penetrating the cord and passing completely through it from behind, and doing a great deal of damage to the motor areas.

DR. FRANCIS D. PATTERSON cited a case of spinal meningitis, ameliorated by lumbar puncture.

DR. BAILY, of Chicago, said he had operated on two cases. One was an injury to the lumbar vertebra from a serious traumatism; the other was a gunshot wound; both were doomed.

DR. L. L. MCARTHUR, of Chicago, Ill., read a paper on

PANCREATIC CYSTS.

In discussion, DR. TURCK, of Chicago, reported a case of pancreatitis hemorrhagica associated with peripancreatitis in the clinic of the Post-graduate Medical School.

DR. FRENCH, of St. Louis, also reported a case.

DR. A. F. JONAS, of Omaha, Neb., read a paper on

RESECTION FOR THE CURE OF KNEE-JOINT TUBERCULOSIS, WITH A PLEA FOR EARLIER OPERATION.

He said that in the past ten years he had had 55 cases under his care, and that the methods of treatment employed came under these different heads: Mechanical immobilization, with plaster-of-Paris or starch bandage and braces; intra-articular injections of iodoform emulsion, followed by compression; puncture with canula and copious irrigation with sublimate solution; free incision and irrigation, with closure by suture without drainage and immobilization; para-articular operations, opening of abscesses, excavation of bone centres; arthrectomy; resection; amputation.

In discussion, DR. MOORE wanted to go on record as to the uselessness of iodoform in the local treatment of joint tuberculosis.

TREATMENT OF POPLITEAL ANEURISM BY EXCISION.

DR. J. C. OLIVER, of Cincinnati, O., read a paper under this title, reporting a case of traumatic aneurism of the popliteal artery in a syphilitic. He believes that the operation by extirpation is the most scientific of all methods thus far proposed for the treatment of aneurisms of the extremities; that it is by far the safest method; that it gives a greater percentage of cures and a less percentage of deaths than any other method; that the operation by extirpation should be resorted to without previous attempts to cure by any other method.

In the absence of DR. SOUCHON, DR. MANLY opened the discussion on the papers.

He was followed by DR. L. FREEMAN, of Denver, and DR. LORD, of Omaha.

THIRD DAY.

DR. A. F. HOUSE, of Cleveland, O., read a paper on

SURGICAL TREATMENT OF ACUTE PERITONITIS.

He believed that death from peritonitis was due rather to rapid intoxication than to inflammation. He recommended making exploratory incision in peritonitis. Early diagnosis is most important and operation should be performed just as soon as the diagnosis is made. The bacillus coli communis, derived from the intestinal tract, is the usual infection. Symptoms demanding immediate operation are general abdominal pain referred to the umbilicus, tenderness on pressure, early rigidity of the abdominal muscles, vomiting of a green substance, distention of the abdomen, pulse thready, weak and rapid, and diminished peristalsis. The operation should consist of three incisions, thorough irrigation of the peritoneum with normal salt solution and drainage by strips of gauze. If the intestines are greatly distended, they should be punctured or incised and their contents evacuated.

DR. A. J. OCHSNER, of Chicago, opened the discussion. He said: This paper of Dr. House's is certainly one of the most important subjects we have discussed during this meeting, and it should be discussed thoroughly. The danger from general septic peritonitis, from which patients die, I think is very analogous to the condition from which patients used to die when surgeons were in the habit of emptying a greatly distended septic bladder; the patient would die within forty-eight hours from what was supposed to be acute nephritis, but what in fact was a very acute sepsis. I am willing to say this — if the septic material in the intestine is stopped, if that patient is not treated medically, if he receives absolutely no medicine, and abso-

lutely nothing that will be found to make more microbes in the intestinal canal, that patient in almost every case will get well. I see dozens of these cases in this condition. I stop the feeding absolutely; I do not give them enough milk or gruel or broth to kill them, because that will increase the amount of septic material in the abdominal canal. If the patient has stercoraceous vomiting, I wash out the stomach. He receives rectal feeding.

DR. J. B. MURPHY, of Chicago, followed in discussion. He said, in part: The important factors I believe in peritonitis are, first, the diagnosis. When does a patient get a peritonitis? When does he get a general peritonitis? And can you recognize that he has a general peritonitis or a local peritonitis that is extending along and is going to become a general peritonitis? The important matter in connection with general peritonitis, as I look on it, is the type of infection. What is the character of the infection? What is the course of that type of infection after the peritoneal surface has been inoculated? We know from experience and opening the peritoneal cavity that contains a large quantity of pus that patients get well. We know from experience that cases with small quantity of pus opened and drained will be fatal; we know from experience that when we see a peritoneal cavity, when the peritoneum is not blistered, when the peritoneum retains its gloss, regardless of the quantity of pus, that the patient in a large majority of cases recovers; we know from experience when we open the peritoneal cavity, regardless of the quantity of pus, that patients with a blistered peritoneum — that is, where the intestine has lost its gloss — the cases will die. We must go back to the type of infection. I believe from cultures we have made from these cases that the blistered cases are of the streptococcus type; I believe again that a large quantity of pus cases are of some other kind — I speak of the pathologic condition when you open the peritoneal cavity. If the peritoneum is blistered, I do not recall a single case that has not been fatal. Where the peritoneum has not been blistered, many, many of them have recovered. I believe all cases of general peritonitis should be treated in the early stage. I believe the diagnosis should be made on pain, tenderness, nausea, vomiting, temperature, distention — and this is not an early symptom, it is the last of the symptoms; it may not be present; you should not wait for collapse or shock; collapse is practically a fatal condition.

DR. BRANHAM, of Baltimore, also joined in the discussion.

DR. MCRAE, of Atlanta, Ga., stated that he had collected, recently, statistics of 601 cases of septic peritonitis subjected to surgical intervention, with a mortality of 79 + per cent. They were all treated surgically, and these results are better than can be obtained by other measures.

DR. PORTER, of Fort Wayne, then took part in the discussion. *(To be continued.)*

AN EXAMPLE NOT TO BE FOLLOWED. — Dr. Klebs has opened in Chicago a private free dispensary for the poor, thereby introducing the German custom into this country. Certainly he deserves no thanks from the medical profession for this innovation, especially as we are just now seeking a remedy for the surplus of existing dispensaries in our cities. — *Cleveland Journal of Medicine*

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JULY 13, 1899.

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ANNUAL DISCOURSES AND ADDRESSES: AN EXPLANATION.

IT has been called to our attention that our editorial communication of June 22d on "The Shattuck Lecture and Annual Discourse at the Massachusetts Medical Society" might be construed as a reflection on certain other discourses which have gone before. Such an idea was furthest from our mind, as we think a careful perusal of the editorial in question would demonstrate. We must adhere still to our general proposition that the oration delivered at annual gatherings is apt to be merely retrospective and often complacent, and hence unstimulating. In making this statement we had no intention whatever of confining our generality to the Massachusetts Medical Society. Our experience has been that the shortcoming of which we speak extends much farther than the confines of Massachusetts or America. Nor, furthermore, did we intend to imply that there have not been notable exceptions to this general rule; it simply was not our intention to dwell upon other exceptions than those which this year's meeting of the State Society gave us, and which, being the last, are most prominently before our minds. We take it that both the Shattuck Lecturer and the author of the Annual Discourse would be the first to disclaim entire originality in the presentation of their themes, and we certainly had no intention of giving that impression in our remarks concerning them. A glance at the proceedings of our own Massachusetts Medical Society during the past few years would dispel such an idea at once.

These latest discourses had, however, in a pre-eminent degree what others, no doubt, have also frequently had, a spirit of dissatisfaction with the present and high hope for the future, which we maintain are the elements which constitute a stimulating oration.

We are doing no one injustice when we generalize in any matter whatever, and just as little do we do injustice when we particularize. In our editorial of June 22d we have generalized regarding the annual oration as it occurs the world over, and particular-

ized regarding the two discourses which graced the meeting of 1899 of the Massachusetts Medical Society. We have, therefore, reflected on no one.

THE FLOATING HOSPITAL.

THE Boston Floating Hospital, which for several years has done an excellent work in caring for infants during the hot summer months, will this year fill a more important place than ever before, owing to the lack of accommodation for sick infants in other institutions. The West End Nursery and Infants' Hospital has closed its doors for the summer to house patients, and the hospital on Rainsford's Island, which for a number of years has been a refuge for many babies, will not be opened this year. It is a perfectly well-recognized fact that the mortality among infants during the summer in large cities is very great, even if they have the care which a hospital affords. It therefore becomes imperatively necessary that provision should be made for their treatment outside the confines of the crowded portions of the city.

It appears that the managers of the Floating Hospital are making this year a special effort to meet the added demands which will no doubt be thrown upon them. Last year a worse enemy than disease to contend against proved to be humidity and weather conditions generally. Death resulted in a number of cases, which might have been avoided could the atmosphere have been kept dry and cool. The physicians in charge have therefore thought that could a ventilating plant be introduced, through which the temperature could be kept at a constant point, not rising above 70°, the efficiency of the hospital might be greatly increased. To this end an appeal has been made for $3,000, which we hope may be forthcoming.

As the hospital has developed, the need of more accommodation for permanent patients has been felt and this year a third ward is to be established for that purpose, increasing the capacity of the hospital by forty patients.

The plan of caring for sick infants by means of floating hospitals has so often demonstrated its usefulness, and our own has already done so much toward the alleviation of conditions met with among infants in summer, that we look with confidence toward its still further development.

SURGICAL INSTRUMENTS ADMITTED FREE OF DUTY.

A DECISION of great interest to the medical profession was made last week by Judge Colt, in the United States Circuit Court, in which he reversed the decision of the Board of General Appraisers, which assessed a duty of 35 per cent. *ad valorem* on an importation of surgical instruments made by the Massachusetts General Hospital.

A duty was assessed upon the instruments under paragraph 177 of the tariff act of August 27, 1894, which provides that "manufactured articles or wares, not specially provided for in this act, composed in whole or in part of any metal, and whether partly or wholly manufactured," should pay a duty of 35 per cent. *ad valorem*.

The hospital corporation contended, and the court held, that the surgical instruments which were imported for use in the hospital in its clinics and training school for nurses were entitled to entry duty free, under paragraph 585 of that act, as scientific instruments. The amount of the duty as assessed was $578.

The court said, "Looking at the whole of paragraph 585 and giving to it a construction in accordance with what seems to have been the intention of Congress, the term 'scientific instruments' means instruments specially designed for use in any particular science, and which are principally employed for such purpose; and, surgery being a science, it covers the surgical instruments in question in this case, which were imported for the use of the Massachusetts General Hospital in its clinics and training school. The fact that such instruments are employed by surgeons in the practice of their profession does not make them mechanical instruments.

"Instruments of this kind, in our opinion, are scientific instruments within the meaning of the statute until it is shown that their principal use is in the trades and arts. For example, an ordinary knife is a mechanical instrument, because its principal use is in the trades and arts, while a surgeon's knife, specially designed for use in surgery, and principally used for such purpose, is a scientific instrument."

The cost of carrying on the case was borne by a member of the medical profession, whose generosity in providing from his own resources for the costs of the case will result in no small benefit to hospitals and schools of medicine and surgery.

MEDICAL NOTES.

DR. MAZZONI THE POPE'S SURGEON. — Dr. Mazzoni, to whose intervention recently Pope Leo XIII owes his restoration to good health, has been appointed by the Pope to be his surgeon-in-chief.

UNIVERSITY OF VIENNA. — Dr. Emil Zuckerkandl, professor of anatomy, has been elected Dean of the Medical Faculty, in succession to Dr. Theodor Puschmann, professor of medical history, who has resigned, because of failing health.

YELLOW FEVER AT SANTIAGO. — It is reported that Gen. Leonard Wood, on his arrival at Santiago from the United States, found the situation more serious than he had anticipated. The headquarters were moved to Songo, twenty miles north, which is about one thousand feet above sea level. All the administrative departments, except the sanitary and a few immune clerks in the quartermaster's and commissary

staffs, were removed to that point. The paymaster has been ordered to suspend all payments to the Cuban troops until the fever has been stamped out, the special object of the order being to prevent the soldiers from drinking during the epidemic.

ANOTHER CASE OF TOTAL EXTIRPATION OF THE STOMACH. — Friday, June 9th, as we learn from the *Philadelphia Medical Journal*, Dr. Kocher, in his clinic at Berne, made a total extirpation of the stomach for carcinoma of the pylorus. The case was held to be favorable because of the absence of lymphatic involvement. The patient was a woman about forty years of age. The stomach was removed as a whole, including the cardia, and a direct anastomosis was made between esophagus and duodenum. The patient recovered from the operation, and apparently was doing well until June 13th, when, for some unaccountable reason, she died. At the post-mortem it was found that, in spite of the great care exercised not to interfere with the circulation of the intestines, the nutrition was sufficiently bad to cause a small area of necrosis in the wall of the transverse colon. As a result of this there was a mild peritonitis, which in the patient's poor condition was enough to cause death. The field of the operation itself was found in good order, the esophagoduodenal anastomosis having nearly healed.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 12, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 52, scarlet fever 25, measles 62, typhoid fever 16, small-pox 2.

FREE VACCINATION ENDED. — The free vaccination station in South Boston was stopped last week by the Board of Health, 1,256 persons having been vaccinated. This last free vaccination brought out the fact that many of the school children in the district had not been vaccinated, though this treatment is requisite for attendance at a public school.

NEW YORK.

THE STRAUSS MILK DEPOTS. — The Nathan Strauss milk depots have recently been opened for the season at various points in the down-town tenement districts, on the recreation piers, and in a number of the public parks. Pasteurized milk and raw milk freed from impurities by the centrifugal process, are sold by the glass (one-half pint for one cent), and pure and modified pasteurized milk furnished in bottles for infants at nominal rates, or free to mothers too poor to pay. There can be little doubt that the more or less general use of sterilized milk has been an important factor in the reduction of infant mortality in New York during the past few years, and it seems probable that the high death-rate among children under five years of age which has of late been noted in Brooklyn may be due, in part at least, to the fact of the less frequent employment of sterilized milk there than in the Boroughs of Manhattan and the Bronx.

THE FLOATING HOSPITAL. — On July 6th, the fifteenth anniversary of the first trip of its floating hospital, the St. John's Guild commenced its summer campaign of active work among the sick babies of the tenement districts. On that date the fine new hospital boat, the *Helen Juillard*, made its first regular trip down the bay, collecting its load of mothers and children from various landings on the east side of the city, while the old boat took its passengers from the west side. At the same time the enlarged seaside hospital of the Guild at New Dorp, Staten Island, was opened for the season. For the past six years there have been three floating hospital trips from both the east and west side every week, but during the present summer, with the increased facilities afforded by the new boat, there will be six weekly trips from each side.

PUBLIC MONEY FOR PRIVATE CHARITIES. — In response to a request from Controller Coler the Charity Organization Society, through a special committee, of which Robert W. De Forest is chairman, has given expression to its views regarding the appropriation of public funds for the support of private charities. The committee gave the matter a careful investigation, and its report is in part as follows: "The result has brought out the exceptional and unique position which New York occupies among all American cities in making large grants to private charities, and the equally striking unanimity of expert opinion against such grants. Of the twenty-nine large cities in the country other than New York included in our examination, twelve, or nearly half, make no grants whatsoever from public moneys to private institutions. Although there are exceptions, it may be said that the general principle governing the matter in the cities and towns of the United States is that public money is given only to public agencies." Having mentioned Washington, Baltimore and Richmond as among the exceptions, the report goes on to say: "In Chicago there are no appropriations corresponding to appropriations made to charitable institutions in New York City. In Boston there are no appropriations whatever to private charities. The same is true of Cincinnati, Cleveland and Pittsburgh, and many smaller cities. A large majority of the twenty or more persons with whom we have corresponded, and who may be regarded as authorities on the subject, emphatically oppose the policy of appropriating funds from the public treasury to private agencies."

MEASURES FOR LIMITING EXPENDITURE FOR CHARITIES. — The following are the recommendations made by the committee: Limiting present appropriations to such classes of agencies as children's institutions and hospitals; discontinuing appropriations to medical dispensaries, abolishing appropriations for fresh-air work carried on by private socie-

ties; continuing appropriations to industrial schools only until they are assimilated with the public-school system; that appropriations to foundling asylums and to children's institutions be upon a per-capita and per-diem basis, and that inmates be accepted by the Department of Charities in advance of payment by the city; that the aggregate amount contributed to hospitals be apportioned on a per-capita and per-diem basis for the patients, and to be divided proportionately to such service among all incorporated and well-managed institutions; no payment to be made for patients cared for in endowed beds. In conclusion, the report urges the necessity of regarding the present exorbitant amount appropriated to private charities as a maximum, and of effecting a very considerable decrease in the amount for each succeeding year.

A GIFT TO THE GERMAN HOSPITAL. — Mrs. C. Knaupp has contributed $10,000 towards the completion of the new German Hospital in Brooklyn, the gift being made on condition that should the donor ever meet with reverses and her condition necessitate her going to such an institution, she shall be received at the German Hospital and treated free of charge.

YELLOW FEVER AT QUARANTINE — TRIAL OF DR. DOTY'S SERUM. — Among the passengers who arrived on July 6th from Santiago on the United States transport *McClellan* were two yellow-fever patients, Oscar Lackey, of Philadelphia, and Miss Ellen Clendenin, a daughter of Dr. Paul Clendenin, the surgeon in charge of the Santiago hospital, who died of yellow fever after the *McClellan* had sailed. These, together with Miss Clendenin's sister and two fever suspects, were taken to the quarantine hospital on Swinburne Island, while the crew and other passengers were transferred to Hoffman Island for observation. In the case of Mr. Lackey, whose condition was serious, Dr. Doty decided, with the patient's consent, to make the first trial in the human subject of his new yellow-fever serum. At 11 P. M. an injection of 25 cubic centimetres was made, and three and eight hours afterwards a second and third injection, each larger than the preceding, were given, the total quantity of serum employed being 90 cubic centimetres. Apparently as the result of the remedy, there ensued a marked decline in temperature and relief of gastric irritation, while the general condition of the patient so far improved as to afford a hope of his making a good recovery.

DIPHTHERIA AT A HOSPITAL FOR THE INSANE. — The Willard State Hospital for the Insane has been placed under quarantine on account of an outbreak of diphtheria. A considerable number of both inmates and employees have been attacked, but the disease is stated to have been of rather a mild type and antitoxin has been freely employed.

SUTURE OF THE HEART. — A case is reported from Binghamton, N. Y., of stab-wound of the heart penetrating nearly through the walls of the left ventricle, in which Dr. F. L. Forker, of that place, after administering a saline intravenous injection to offset the loss of blood that had occurred, sutured the injured organ. The patient survived for forty hours, when death resulted from septic pericarditis.

A WIDOW'S RIGHT TO HER HUSBAND'S BODY. — On June 29th Justice Bischoff, in the Supreme Court, handed down a decision respecting a widow's right in the body of her husband. The case was that of Mrs. Mary Buchanan et al. *vs.* James D. Buchanan, an action for replevin and damages in the amount of $5,000. The plaintiff is the widow of Dr. Alexander Buchanan, who died September 2, 1896. The body was interred in Greenwood Cemetery by the brother of the deceased, James D. Buchanan. Mrs. Buchanan was not consulted as to the disposition of the remains, not having lived with her husband for nine years previous to his death, and having an action for divorce against him pending in the courts at the time of his death. A year after his death she brought the action for the possession of the body and damages for its unlawful detention. In the trial of the case, in which a jury was dispensed with by consent, the evidence introduced and uncontradicted was to the effect that just before his death Dr. Buchanan extracted a solemn promise from his brother, before a number of witnesses, that he would never allow his ashes to mingle with those of his wife. In his opinion the judge said that while it had been generally stated that there could be no right of property in a dead body, still it was recognized that there exists a personal right in husband, wife or next of kin to have the custody of the remains of the deceased relative for the purpose of burial. In this case, however, there was no question that husband and wife were divided in life, and it was the expressed wish of the deceased that they be as fully divided in death. Judgment was, therefore, ordered for the defendant on the pleadings.

ARMY NOTES.

APPOINTMENTS OF HOSPITAL STEWARDS IN THE NEW VOLUNTEER REGIMENTS. — General orders establishing the new regiments of volunteers provide that candidates for appointment as hospital steward, must produce certificates of proficiency from a reputable college of pharmacy, and after enlistment will be appointed as such by the colonel of the regiment upon the recommendation of the surgeon of the regiment, the warrant to be made, and the appointment to take effect, on the date of enlistment. Army regulations applying to hospital stewards in the regular army, except as herein otherwise provided, will apply to regimental hospital stewards who may be discharged from the service, for cause, by the Secretary of War, upon the recommendation of a board of three officers convened by the regimental commander to investigate and report upon the case.

GENERAL WOOD'S JURISDICTION EXTENDED. — Gen. Leonard Wood, who recently sailed for Santiago, has been appointed military governor of the prov-

ince of Porto Principe in addition to that of Santiago, thus being placed in control of about half the island of Cuba.

DEATH OF DR. CLENDENIN FROM YELLOW FEVER. — The second medical officer to succumb to yellow fever at Santiago was Capt. Paul Clendenin, assistant surgeon, U. S. Army, who was in command of the general hospital at that place. Dr. Clendenin was the son of Gen. David R. Clendenin, U. S. Army, and was thirty-seven years of age, having been in the military service for thirteen years. Immediately prior to the outbreak of the war with Spain he was on duty at Key West, and was sent from that point to Havana to attend the victims of the *Maine* at the first news of that disaster. Dr. Clendenin was twice married, and leaves several children; one daughter, who left Santiago several days previous to his death, experiencing an attack of yellow fever while on board the transport *en route* to New York.

MEDICAL APPOINTMENTS TO THE NEW VOLUNTEER REGIMENTS. — The President has appointed the following medical officers to serve with the eight regiments of volunteer infantry, recently created for service in the Philippines, a major, captain and lieutenant being assigned to each regiment. The appointments, together with the former service of the appointees, are as follow: Surgeons, with the rank of major, — Ogden Rafferty, captain and assistant surgeon, U. S. Army, late brigade surgeon, volunteers; Charles F. Watson, captain and assistant surgeon, U. S. Army, late brigade surgeon, volunteers; John R. McDill, late brigade surgeon, volunteers, now acting assistant surgeon U. S. Army; Frank C. Armstrong, late surgeon, 21st Kansas Volunteers; Thomas W. Chalmers, late surgeon, 12th New York Volunteers; Charles L. G. Anderson, late assistant surgeon, U. S. Army, now acting assistant surgeon, U. S. Army; B. Albert Lieberman, late surgeon, 6th Missouri Volunteers; Joseph N. Henry, late surgeon, 4th U. S. Volunteer Infantry. Assistant Surgeons, with the rank of captain, — John R. Hereford, late surgeon, 1st Missouri Volunteers; James C. Minor, late surgeon, 1st Arkansas Volunteers; Frank W. Foxworthy, late assistant surgeon, 160th Indiana Volunteers; Abram L. Haines, late surgeon, 203d New York Volunteers; James J. Erwin, late assistant surgeon, 10th Ohio Volunteers; W. E. Parker, late acting assistant surgeon, U. S. Army; James E. Shellenberger, late surgeon, 3d Ohio Volunteers. Assistant surgeons, with the rank of first lieutenant, — William H. Cook, acting assistant surgeon, U. S. Army; Lomax S. Anderson, late assistant surgeon, 5th U. S. Volunteer Infantry; Leonard K. Graves, late assistant surgeon, 201st New York Volunteers; Ralph S. Porter, late assistant surgeon, 2d Illinois Volunteers; John A. Metzger, acting assistant surgeon, U. S. Army; Patrick J. McKenna, late assistant surgeon, 2d U. S. Volunteer Engineers; Albert H. Eber, late assistant surgeon, 35th Michigan Volunteers; John E. Boyd, late captain, 2d South Carolina Volunteers.

Correspondence.

CALVIN ELLIS.

MR. EDITOR: —

To one who recalls the character of our dead friend it seems like a derogation to feel so much of gratulation, and to speak so much of eulogy, because of his large bequest of *money* to the cause of medical education. Is it unknown, or is it quite ignored, that the legacy in which he felt the highest pride was that of the faithful record of his professional work bequeathed to those who may come after him? It may be dry and faded like the herbarium of a botanist, but it is a *thesaurus* of classical labors collected during many years of conscientious and thorough study. We know that in every page will be found careful observation and honest registration by a competent man, and that such work is at least as worthy of preservation, as valuable to posterity, as that which describes plants, their forms, growth, flowers, etc. Will any one say that these things have no practical or scientific value? In the letters of our greatest American botanist, Dr. Asa Gray, we see how great importance he attaches to the study of the older botanists and of their herbaria, however dry or incomplete.

Is it not quite proper, indeed usual, in the disposal of a legacy of money, to use it, or a portion of it, in accordance with the known wishes of the testator, even when the will itself fails to indicate any such specific intention on his part? Now, it is well known to many of his friends that Dr. Ellis during his last sickness often regretted that his notes had not been transcribed, so that they might be published.

Why should not this be done now, and by the aid of a part of the income of his legacy?

His manuscript is not likely to prove at all as difficult as that of the cipher of "Pepys' Diary," which after two hundred years has been written into perfect form by the Rev. Mynors Bright, A.M., and under no finer stimulus than: "you may as well decipher afresh 'Pepys' Diary.'"

A far higher motive exists for deciphering the records of the professional life of Calvin Ellis.

Z. B. ADAMS, M.D.

METEOROLOGICAL RECORD

For the week ending July 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...25	30.05	71	76	66	81	83	89	W.	S.W.	7	10	O.	O.	.08
M..26	30.06	70	80	60	69	41	55	W.	N.	7	7	C.	C.	
T...27	30.10	69	80	57	51	45	48	W.	W.	5	6	C.	C.	.01
W..28	29.96	76	82	59	55	94	74	S.W.	E.	9	4	O.	O.	.66
T...29	29.91	66	77	54	87	45	66	N.	W.	7	5	O.	C.	.46
F...30	30.10	65	75	55	30	43	36	N.W.	S.E.	27	5	C.	C.	
S....1	30.17	66	82	55	81	44	48	W.	S.W.	5	13	C.	C.	
☞														1.21

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 1, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1369	664	33.25	16.50	25.69	1.12	3.71
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,483	193	60	4.68	15.08	.52	—	2.08
Baltimore	508,389	229	123	36.52	5.72	31.68	.44	2.64
Cincinnati	405,000	120	—	12.75	6.80	7.65	2.55	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	103	44	3.92	7.84	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	46	14	17.36	4.34	—	2.17	2.17
Nashville	87,754	34	16	20.58	14.70	17.64	—	2.94
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	28	11	10.71	7.14	—	—	3.57
Fall River	99,919	26	9	23.10	19.25	23.10	—	—
Cambridge	89,724	27	10	7.40	3.70	—	—	—
Lowell	88,641	38	15	7.89	13.15	7.89	—	—
Lynn	66,703	21	3	9.52	14.28	4.76	—	—
New Bedford	66,340	15	6	13.33	6.66	6.66	—	—
Somerville	61,101	12	7	—	—	—	—	—
Lawrence	57,383	19	11	36.82	15.78	—	—	10.52
Springfield	56,501	18	2	11.11	16 66	5.55	—	—
Holyoke	43,424	16	5	12.50	12.50	12.50	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	10	1	—	20.00	—	—	—
Malden	34,613	4	2	—	—	—	—	—
Chelsea	33,468	6	2	—	16.66	—	—	—
Haverhill	32,022	10	3	—	10.00	—	—	—
Gloucester	30,589	—	—	—	—	—	—	—
Newton	29,716	2	—	—	—	—	—	—
Fitchburg	28,438	4	2	25.00	—	25.00	—	—
Taunton	28,167	7	3	—	—	—	—	—
Everett	25,338	6	5	16.66	—	—	—	—
Quincy	23,549	3	2	—	—	—	—	—
Pittsfield	22,643	3	1	—	—	—	—	—
Waltham	21,812	5	3	40.00	—	40.00	—	—
North Adams	20,971	5	3	—	—	—	—	—
Chicopee	17,842	13	8	53.83	7.69	46.14	—	—
Medford	16,511	6	—	—	33.33	—	—	—
Newburyport	14,915	5	—	—	20.00	—	—	—
Melrose	14,032	1	—	—	—	—	—	—

Deaths reported 2,406; under five years of age 1,034; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 475, diarrheal diseases 367, consumption 237, acute lung diseases 203, diphtheria and croup 53, typhoid fever 16, cerebro-spinal meningitis 16, measles 11, whooping-cough 10, erysipelas 2, small-pox 1.

From cerebro-spinal meningitis New York 5, Baltimore 3, Washington and Worcester 2 each, Boston, Cincinnati, Springfield and Everett 1 each. From measles New York 8, Boston, Baltimore and Lynn 1 each. From whooping-cough New York 9, Baltimore 1. From erysipelas Boston and Cambridge 1 each. From small-pox Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending June 24th, the death-rate was 16.3. Deaths reported 3,558; acute diseases of the respiratory organs (London) 190, measles 131, whooping-cough 90, diphtheria 80, diarrhea 58, fever 32, scarlet fever 18, small-pox (Hull) 1.

The death-rates ranged from 8.2 in Croydon to 22.9 in Wolverhampton; Birmingham 16.8, Bradford 14.8, Gateshead 17.6, Huddersfield 16.1, Leeds 15.9, Liverpool 21.9, London 15.5, Manchester 21.0, Newcastle-on-Tyne 18.3, Nottingham 16.8, Portsmouth 14.2, Salford 17.4, Sheffield 19.2, Swansea 15.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 8, 1899.

RALPH W. PLUMMER, assistant surgeon, appointed surgeon from June 17, 1899.

J. C. WISE, medical inspector, granted sick leave for three months.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 6, 1899.

MURRAY, R. D., surgeon. To defer departure to Key West, Fla. (as directed by Bureau letter of May 16, 1899), until further orders, and to proceed to New Orleans, La., for special temporary duty. July 1, 1899.

WASDIN, EUGENE, surgeon. To proceed to Norfolk, Va., and assume temporary charge of the Service at that port not later than July 17, 1899. July 5, 1899.

MCADAM, W. B., assistant surgeon. Bureau letter of May 15, 1899, relieving Assistant Surgeon McAdam from duty at Key West, Fla., revoked and directed to reassume command of the Service at Key West. June 30, 1899.

ROBINSON, D. E., assistant surgeon. Relieved from duty at Chicago, Ill., and directed to proceed to Mobile, Ala., and report to the commanding officer for duty and assignment to quarters. June 30, 1899.

ALTREE, G. H., acting assistant surgeon. Granted leave of absence for four days. July 3, 1899.

BEAN, L. C., acting assistant surgeon. Granted leave of absence for two days. July 5, 1899.

APPOINTMENT.

MCISAAC, FRED C., appointed acting assistant surgeon, for duty at Evansville, Ind. July 3, 1899.

RESIGNATION.

BRUNNER, W. F., sanitary inspector. Resignation accepted as tendered, to take effect June 30, 1899. July 3, 1899.

RECENT DEATHS.

WILLIAM HOWARD NEILSON, M.D., a prominent physician of New Rochelle, N. Y., died on July 6th, after an operation for appendicitis. He was born in New Brunswick, N. J., in 1858, and was graduated from Bellevue Hospital Medical College in 1877. At the time of his death he was a member of the Westchester County Medical Society and of the Board of Aldermen of the city of New Rochelle.

J. E. GRAHAM, M.D., of Toronto, Can., who died a few days ago, was one of the most widely-known physicians of Canada. He was President of the Dominion Medical Association in 1887, of the American Dermatology Association in 1889, and was one of the original members of the Association of American Physicians. In 1893 he was made a member of the Royal College of Physicians, London.

BOOKS AND PAMPHLETS RECEIVED.

Die Ursache übler Nebenwirkungen heisser Bäder und deren Verhüting. Von Dr. Foss, dirigirendem Arzt des Bades Driburg in Westfalen. 1899.

A Ring-pleximeter. A Finger Protector for Handling the Headmirror. A New Hearing Device. By Emil Amberg, M.D., Detroit, Mich. Reprints.

On the Use of the Valerianates of Creosote and Guaiacol in the Treatment of Pulmonary Tuberculosis. By A. B. Briggs, M.D., Ashaway, R. I. Reprint. 1899.

Naphthalin in Typhoid Fever, a Remedy in Preventing Intestinal Putrefaction and Tympanites. By Albert Woldert, Ph.G., M.D., Philadelphia, Pa. Reprint. 1899.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia University, New York. Vol. VI, for the Collegiate Year 1898-1899. Reprints.

The Schleich Method of General Anesthesia, with Special Reference to Nose, Throat and Ear Practice. By W. Scheppegrell, A.M., M.D., New Orleans, La. Reprint. 1899.

The Influence of the Heart-beat on the Flow of Blood through the Walls of the Heart. The Teaching of Physiology in Medical Schools. By W. T. Porter, M.D., Boston. Reprints. 1898.

Urinary Analysis and Diagnosis by Microscopical and Chemical Examination. By Louis Heitzmann, M.D., New York. With 108 original illustrations. New York: William Wood & Co. 1899.

The Surgery of the Head and Neck. By Levi Cooper Lane, A.M., M.D. (Berol.), M.R.C.S. Eng., LL.D., Professor of Surgery in Cooper Medical College, San Francisco. Second edition. Philadelphia: P. Blakiston, Son & Co. 1898.

The Higher the Order of Railway Surgery, the Greater the Protection to the Employe, the Passenger and the Company. Appendicitis: When to and when not to Operate. By R. Harvey Reed, M.D., Rock Springs, Wyo. Reprints. 1899.

Text-book of Anatomy, Physiology and Hygiene. By E. Franklin Smith, M.D., Lecturer on Anatomy, Physiology and Hygiene, New York Preparatory School; Member of the New York Academy of Medicine, etc. New York: William R. Jenkins. 1899.

Anæmia and Some of the Diseases of the Blood-forming Organs and Ductless Glands. By Byron Bramwell, M.D., F.R.C.P.(Ed.), F.R.S.(Ed.), Physician to the Royal Infirmary, Edinburgh; Lecturer on the Principles and Practice of Medicine, and on Clinical Medicine in the School of the Royal Colleges, Edinburgh, etc. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall & Co., Ltd. 1899.

Address.

NOT THE DISEASE ONLY, BUT ALSO THE MAN.[1]

THE SHATTUCK LECTURE.

BY JAMES J. PUTNAM, M. D., BOSTON.

MR. PRESIDENT AND MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY: — I take as the text for my address the familiar sentiment that often falls so solemnly from the lips of older members of the profession in addresses to students who are about to graduate from the schools of science into the school of life: Remember, when you go to see your patients, that it is after all the man, not the disease, that you are called upon to treat.

Impressive as this phrase sounds, I have often wondered just what the various speakers had in mind. This patient might be poor in purse, that one predisposed to certain ailments; the social or domestic surroundings of a third might make his case a peculiar one, and so on. But such external circumstances, important as they might be, would not exhaust the significance of the admonition. We cannot really know the man whom we are called upon to treat without going far beyond his outward relations and penetrating in imagination deep into his mental life. "The man" is, above all else, the mind of the man, and not only the mind as an organ of conscious thought but the mind as an organ of bodily nutrition, and the mind as a vast theatre for the interplay of contending forces that do not always recognize the personal consciousness as their ruler. This is the man that the doctor should learn to know and treat. The need is not met by kindliness and humanity alone; the task is one for science also. Yet medical schools do not prepare their students at all adequately for this duty, or include a knowledge of psychology among their requirements for matriculation. The genius of the truly great physician may bring him to the goal, it is true, without a master's guidance. But if we are not content with the intuitions of the few; if we wish to see principles laid down that shall reflect the highest possibilities of medicine, the training of the doctor must begin during college life. I should rate a thorough preliminary course in psychology and philosophy far above a knowledge of botany or zoölogy, and as following close on chemistry and physics, as a preparation for the work of a general practitioner.

It is not the least of the benefits that will come to us from the insistence on a college degree as a condition for entrance to the Harvard Medical School, that a better chance will have been afforded for remedying this lack in the students' fitting. We want to see in the men whom our university sends forth, proud of her warrant of tasks faithfully performed, not only sporadic signs of a capacity to recognize and control, each after his own fashion, the gigantic and ever active forces of the mind, but abundant evidence that this problem has been, in all its many aspects, an object of their studious thought. The physicians who have previously been good students of psychology have, in my experience, proved themselves to be men of unusually broad sympathies and high ideals, and keen to see causes of disease to which the pure pathologist is often blind. For what a man sees or fails to see depends, as we all know, on how the vast storehouse[2] of his mind has previously been stocked. The inhabitants of that hidden world, like groups of men in society, welcome the new comer whose manner and dress are familiar, and let the others pass unnoticed.

No argument is needed to show what transforming power the mind can exert. The energy set free by the magic agencies of hope, courage, desperation, fanaticism, or by the enthusiasm for a great cause, may reveal the possession of a force undreamed of, or so husband the resources of the body as to keep the flame of life burning for a time when the oil seems exhausted. These great influences have been the doctor's best ally since time began; the harp of David singing to Saul is heard again in the music which is used to tie with new bonds to life the inmates of our State Hospital for the Insane at Danvers. The great leaders of the scientific centuries to which we belong have indeed turned a cold shoulder on the time-honored methods of cure by faith and fear which had worked miracles for ages past. Their work lay in establishing the reign of exact methods of inquiry, and they would tolerate no systems that rested on a less firm basis. But the movement which the labors of these men of science inaugurated is now secure beyond all hazard, and the time has come to recognize that there are others that may justly lay claim to our attention. We may accept the limitations which the scientific method imposes, even to the point of sacrificing intuition for the sake of a more conscious insight. But we should not admit any arbitrary limitation of the field of inquiry, nor rest content until scientific research has taken all the divinations of instinct into account. The splendid wave of pathological and bacteriological research that has raised the art and science of medicine to its present position of authority has set physicians trying to solve their problems in terms of pathology alone; but it is a matter for congratulation that this wave is being reinforced by another which is sweeping us toward a better knowledge of the secrets of the mental life in health and disease. Perhaps we may even learn thereby to interpret the teaching of pathology itself in a wider sense.

The physician is an educator; the successes of the schoolmaster are his successes; the fact that even

[1] Delivered before the Massachusetts Medical Society, June 13, 1899.

NOTE. — While this lecture is in press the news arrives — to the disappointment and grief of his many friends — of the fatal ending of Dr. Russell Sturgis's long illness. The loss is an especially serious one for the progress, in our community, of the cause which this address was designed to make more popular, and to the furtherance of which he had brought original investigations of substantial value.

[2] I do not think it really accurate to speak of the brain as a "storehouse," as is so often done, though the term is familiar and expressive. In fact, the brain is no more a storehouse of the events that have transpired in and through it than the brass disc is a storehouse on which the sand will shortly arrange itself, at the touch of the bow, in the wonderful Lissajou's lines, or than the sounding-board of a piano is a storehouse. When the brain is inactive (if one could imagine such a state) it is incapable of telling any story as to its history. But each new stimulus revives each old activity, of identical, or similar, or congruous, or contrasting sort, and so on. The reviving flash of consciousness which occupies each new moment, like the thrill which at the same moment sets the brain into vibration, is a single complex impulse, an instantaneous photograph, and although it takes the form of memory, it belongs in fact wholly to the present.

Neither does it seem to me exact, at least from the point of view of the cerebral physiologist, to speak of "inheriting ancestral experience." What we inherit is a brain so plastic in certain directions and so little inhibited on those lines that it organizes its experiences of certain sorts with great rapidity.

The power which passes as "intuition," and which seems endowed with faculties that transcend and antedate experience, may, I think, be, after all, experience — taught, though the teaching is marvellously rapid and effective. Any one of us, if he could have appreciated and appropriated and made his own all the opportunities that have been afforded him for education of the brain in any special line would be a genius in that direction.

after such long years of scrutiny and experience the pedagogue still finds new methods of impressing his pupils, and new principles to guide him, gives warrant for the hope that the same may prove true for the physician, provided only that he brings the same amount of patient labor to the solution of his special problems. I doubt if most general practitioners are aware how far, in fact, this hope is already realized. We all hear of the triumphs of surgery, and every doctor feels a personal pride in spreading the news of them abroad. But there are not so many who know that there are men, as yet few in number but of equal genius, who with equal devotion and study have been searching for means to change, little by little, the trend of the forces that work within the mind, and are thus silently laying the foundations of a new departure in therapeutics. This is education of a high order,[1] and such studies as these must yield conclusions that the well-trained doctor will find use for in his daily practice.

In the sort of training that is undertaken for the sake of breaking up morbid habits of the nervous system, or of establishing favorable habits under difficult circumstances, the need is even more evident than where only the teaching of the schoolroom is at stake — of inducing reactions that shall have an effective outcome. Definite accomplishment, and motion at any rate are often the prime conditions of mental health. If water does not flow it stagnates, and the more so in proportion to its lack of purity. To this outcome of effectiveness, the effectiveness which implies continuous growth through utilization of evil and of good, the influence of the doctor, above all other educators, is instinctively pledged. No wonder that his efforts are often crowned by disappointment and failure; these are but the disappointments and failures of the schoolroom intensified.

Fortunately, no one here is likely to interpret too narrowly the meaning of effectiveness. There is absolutely no criterion of accomplishment except that which should say whether or not a man had done his best. To refrain from acting is often the fullest act. Washington coolly facing his enemy and his own limitations, and waiting for the chances that rarely came, presents no figure of greater energy or heroism than is presented by the resigned, the cheerful, the ever-ready neurasthenic patient who is doing the best he can. "They also serve who only stand and wait."

The doctor is most obviously an educator in dealing with the training of children, when the task that he sets for himself is practically identical with that necessarily set for the schoolmaster and the parent. I refer to this class of cases for the sake of calling attention to the remarkable results now attained at the various institutions for defective children in this country and in Europe, among which our Massachusetts School for the Feeble-minded, under the able leadership of its present superintendent, might compete for the highest rank. So fine are the chances thus presented that the definition of feeble-mindedness is now being widened to secure the benefits of this training for children not heretofore recognized as defective. Even when regarded simply as schools for the training of teachers and the development of methods of teaching, such institutions as this are bound to hold an exceptional place, because in order that any success at all should be gained, the slightest action and reaction of each pupil's mind have to be recognized, while the educational principles that are followed must be of the best sort, and must be administered with personal devotion and close attention to details.

Even where the child is not strictly defective, but simply a hard case for the parent and the schoolmaster, the methods of influence to which clinical research has given birth are likely to find an important if not a wide field of usefulness. The subject is too large a one to speak of in detail, but there are cases, as the teacher should realize, where the birch and the fool's cap are less useful than the training by the aid of influences such as I shall presently refer to, to be administered under the skilled supervision of the doctor alone. Certain disorders of the physiological reflexes, such as enuresis, are eminent examples of an analogous though a more obviously medical sort. There are cases of this kind where even hypnotic suggestion, of a mild degree and such any physician can soon learn to use with safety and sufficient skill, is the best cure. In fact, the only rational treatment of enuresis and constipation consists in a re-training of the physiological reflex, and the re-establishment of the all-powerful habit and expectation on which they rest. Mechanical and medical means may be used to further this design, but the routine employment of drugs without this end in view does but rivet afresh the assumption and habit of failure. That part of the conscious life to which, after the early years of childhood, the control of such functions as these is delegated should be taught again to work in harmony with the general needs.

But the doctor is seen also in his function of educator when dealing with clinical cases of a commoner sort. Sometimes a process of training must begin afresh because the old machinery of the nervous system has become defective through disease. No year now passes without its records of new successes in this line.

Thus, in spite of all the study that has been given to the treatment of locomotor ataxia, it is only recently that we have learned (under the leadership of Frenkel) that patients with this disease, even when bed-ridden from inco-ordination, can be taught by systematic gymnastics to use their muscles anew, and can thus regain to a considerable degree the lost control over their limbs. A therapeutic discovery like this is a sign of promise, and an inspiration to new research in other lines. The ataxia of the muscles typifies also the ataxia of the mind and of the other functions of the nervous system. We pay dearly for the possession of the intricate machinery which gives us our vivid imagination, our retentive memory, and that power by which we are able to grasp at each moment all the threads of our past experience and to weave them into a new fabric for the service of the present. Mischief begins when the demands of this service cannot be properly met, and the different parts of the vast machine run too fast or too slow; the delicate adjustments fail to respond or work too fine. Then the heart palpitates, which should simply strengthen its

[1] I will refer, simply by way of illustration, to the recent searching analysis of clinical cases by the now well-known Pierre Janet: Névroses et Idées fixes, Paris, 1898. The following paragraph, p. 406, which concludes one of the chapters, may give some notion of the author's aim and spirit: "Objective psychology (that is, by clinical observation) does not aim at supplanting subjective psychology, which will remain indispensable for the study of the laws of thought. Neither does it aspire to set up any system of metaphysics or religion, or to overthrow any earnest belief. Its task is to gather together the facts which are essential for a real insight into the working of men's minds, and to discover the art of securing the freest play for healthy mental life and the best alleviation for mental disease."

beat to meet a need for more blood. Then a bronchitis provokes an asthma, and this recurs and becomes a habit. Or a painful impression that should have disappeared with its cause, swept down the swiftly flowing stream of consciousness, is caught by a backwater, or rolled to and fro in an eddy from which it cannot escape. Or, again, the instinct of imitation, imitation of others or of ourselves, makes us copy and perpetuate a bad trick of muscle or of thought. And so arise the diseases of morbid association and habit[4] the caricatures of the arrangements and co-ordinations of health. Here is a singer[5] who in the first days of his career found himself with beating heart[6] and shaking voice in consequence of a stage fright. He is now a veteran, and no longer stirred by fear of failure, yet his old fright remains indelibly stamped upon his trembling muscles, which do their best, in their turn, to drag back the old emotion. There is at first a divorce between the bodily manifestation and the mental state, and then a new union an abnormal lines.

"I am not frightened, but my body is," said an intelligent friend. "It is my body trembles at the sight of the dangers into which my triumphant soul will carry it," said a hero of an earlier day.

Or, again, to take an example of a habit disease of another sort, here is a patient who has had an inflamed joint. It is long since the local disorder passed away, yet the pains which used to attend it recur at every trifling movement which even remotely resembles those that used to drag upon the sensitive part. The demoralization following illness, or misfortune, or accidents, is a rich source of such disorders. A patient has haunted our hospital clinic for a long time who thirty years or more ago received a blow upon the head which set up a spectral pain that has been his constant companion ever since, though even now he looks in blooming health. Any innate weakness which prevents the brain from carrying on its normal function of prompt, efficient reaction may allow morbid tendencies of these sorts to establish themselves, as weeds grow in a soil too poor to support a better product.

It is not correct to say that these pains are "imaginary." Regarded psychologically, they are just like all other pains. On the field of battle even the ordinary physical causes of pain may fail to cause it, for the impression is followed by no reverberation within the soldier's conscious attention. In the conscious attention of the over-sensitive patient, on the other hand, this reverberation is excessive, and thus the merest hint of physical cause, a whisper of apprehension, the influence of cyclic recurrence like that which reproduces sleep, or even the influence of memory, may make the pain come back.[7]

Fortunately, the knowledge that so many of our ills have this mental origin stimulates to the search for new means of cure, for new means of securing some strong outward trend for the active forces of the brain and thus inducing a little of the healthy anæsthesia of the battle-field.

The patient finds it hard to credit the fact that his sufferings are due to mental representation alone, and no wonder. For by what criterion can he, unskilled and anxious, be expected to decide, when the physician, with all his means of diagnosis, is so often in doubt? Frequently, of course, the symptoms are only partly due to habit, and partly also to some local cause. Every good physician is aware of this, but it is not so well known that the removal of other physical disorders, perhaps not originally connected with the symptoms at all, but now a real complication, may induce a partial or temporary alleviation, which will supply the very impulse that was needed to give new hope to the mind and a new "set" to the functions of the nervous system. Thus it is that the treatment of trivial diseases of the eyes or joints can sometimes work such wonders; and thus, too, the new doctor so often eclipses the old. On the other hand, the keen physician will not let himself be trapped into the error of concluding that he has found the cause of the illness because he has found the cure. This is a piece of false reasoning that has worked much mischief and has often brought an unmerited credit to immature theories of disease.

The subject of the *social etiology* of "habit" disease has many interesting and important aspects. Prof. William James[8] has recently suggested that many of the racial peculiarities, such as the high-pitched, anxious voices, the hurried manner, the "over-modelled" faces that do not easily relax, the tense and exhausting eagerness, which visitors see so often among the people of old New England, are due not so much to excess of sunlight and dry air as to tradition and imitation. A comparative study of the varied races of which the population of New England is now composed, made from this point of view and as a basis for more rational treatment, would be heartily welcome. This or that American or Irishman or Jew cannot be treated to the best advantage so long as he is regarded solely as an individual. His racial traditions and temperament should be taken instinctively into account, just as the pianist (to borrow a simile used by Kries) on starting to play a piece of music, glances once for all at the signature which indicates the key in which the piece is written, and then, without need of specific reflection, goes on throughout playing the notes with their appropriate sharps and flats.

To learn to do this sort of thing, to speak and comprehend the mental language of all sorts and conditions of men, is one of the many important tasks which the physician will in time learn to perform.

The existence of these habit diseases is known to every doctor, but this very fact is liable to give one a false sense of confidence in his ability to recognise them. Common as we may think them, they are yet commoner than we think. The most striking forms are seen in hysteria, the chief characteristic of which is that the patient's consciousness is split up into more or less separate groups of forces, which strive

[4] At the last annual meeting of this Society various types of habit neuro-psychosis were described by Dr. Edward Wyllys Taylor: Boston Medical and Surgical Journal, July 21, 1898.

[5] This illustration is given by Dr. Morton Prince, and I take occasion, in citing it, to call attention to the excellent work which he has done in this direction. See various papers published in the Boston Medical and Surgical Journal, 1898; also Association Neuroses, New York Journal of Nervous and Mental Diseases, 1891.

[6] The presence of these cardiac and circulatory phenomena, as a part of the habit neurosis, is a complication of a peculiarly distressing and important sort ("Angst-neurosis"). See Heart Fear, by W. T. English: Medical News, April 29, 1899; also L'Education de la Volonté: Payot.

[7] Dr. Morton Prince has suggested that the excessive tendency to the mental representation of pain shown by certain persons justifies the designation of them as "algesics," just as other persons to whom visual images readily occur are called "visuals," and so on.

Dr. Mary Putnam Jacobi thinks it possible that the increased sensitiveness of the "pain-memory" may be a part of the general increased attention to the history of the past, though a morbid example of this tendency. New York Medical Journal, April, 1898.

[8] Talks to Teachers. 1899.

with each other for the mastery. The patient is no longer a consistent unit, and is forced, against his will, to play, with the skill of genius, the rôle of disease.

But hysteria is not the only soil on which these disorders grow, unless indeed we admit that the hysterical tendency is universal, and that hysterical disabilities and eccentricities are but acute forms and caricatures of the disabilities of normal or quasi-normal life. The term "hysteroid," which retains the notion that such affections are due largely to mental representation, is often an appropriate designation.

The "accident neuroses" form an especially important sub-group, the more so that one can trace, both in the influences which make certain classes of patients peculiarly susceptible to them, and in those which finally excite the outbreak and give it its special form, the play of forces that recall "hypnotic suggestion," and are seen at work on a large scale in mob-madness or panic. The patients who suffer from the severer forms of these disorders are, strangely enough, largely of the mechanic and wage-earning class, who, although sturdy, and used to hardship of various sorts, are apt to be lacking in social and general experience, and are not trained in the sort of self-control that society expects from its members, while, at the same time, their lack of a fixed source of income makes a period of enforced idleness a matter of great moment to them. They are not, as a rule, predisposed by neurotic inheritance, and have usually been strong and healthy, but the traditions of the community in which they were born and bred inculcate the instinctive belief that accidents are terrible events and lead to mysterious and complex troubles. To the patient whose mind is thus stocked with traditions and instincts sympathetic to misfortune, there come next the startling and disabling circumstances of the accident itself, which dethrone the self-control and profoundly disturb the emotions and through them the action of the circulation and the heart, and to this is added the special "suggestion" furnished by some local injury or special fear. It is then as if some one had whispered to the demoralized patient, "Your arm will be paralyzed," or, "You will be an invalid for years." These cases are extremely numerous and immense sums are paid on them in damages. The general practitioner can do the community great service by recognizing and spreading the view that serious as such illnesses often are it is largely mental causes that make them so. A stalwart position of hopefulness taken by the attending physician, at the outset, as a basis for a persistent and thorough treatment by encouragement, and explanation, and personal influence, before morbid habits and invalidism have become ingrained, may save many a patient from a demoralization that the money secured by the verdict cannot make good. How often, on the other hand, does the doctor say: "Madam, you really ought to take care of yourself; you are far more severely injured than you think you are." There is usually a period, to be sure, at the very beginning of the case, when it could be said with truth that the patient is "more severely injured than he thinks he is," because the disturbance that is going on in the deep sea of his mental life has not yet reached the surface. But for him this is a blessed ignorance, and it is a misfortune when the time comes that it is exchanged for a delusion as to the real nature of his disease. It is not the hope of gain that is the prominent factor here, in spite of the raillery of the court room. Doubtless it plays its part, but the essential influence is the disorganition of the forces that rule within the mind, and that, instead of acting in harmony, as they should, break into disorder, like soldiers in panic, and then instinctively seek to readjust themselves under any tolerable, if imperfect, organization and leadership. Happy it is for the patient if this reorganization is effected under the guidance of a doctor who has had the fortune to be graduated with high marks from some philosophical department as admirable as that of our good foster-mother across the river, and thus buoyed up, has brought an undivided will to the study of medicine.

In the treatment of all these "habit" cases, a persistent and insistent *encouragement*, based on a physical examination of rigid thoroughness, and accompanied by an *explanation that has the force of encouragement*, and leaves no doubt as to the physician's conviction, will often clear out the weeds that block the flow of the river of consciousness and let the current sweep along, with the self-obliviousness of healthy activity, in its old channel.

It is a striking fact, as regards explanations, that they have much greater weight after the physician's authority has become established by the partial success of his treatment. The arguments offered beforehand may have been just as convincing as those offered later; so delightfully logical, in fact, that the physician often buttons on his overcoat and leaves the patient's door with the self-satisfied conviction that the battle had been won for both parties. How great then is his surprise, amounting almost to indignation, when he discovers, at his next visit, that not even the outposts of the enemy have been won. Let the patient's confidence have been gained by a little success in treatment, however, and he may accept (sometimes too readily) any explanation, logical or illogical, that the doctor is inclined to offer. All mental healers know this well, and have known it, doubtless, since long before the day when the doubting and suspicious Naaman professed himself ready to accept the religious views of Elisha in return for the cure of his leprosy. The explanations of the doctor are in fact quite as much an appeal addressed to the faith as an argument addressed to the reason.

It will be remembered that Naaman, who was a captain of the host of the King of Syria, was afflicted, according to the diagnosis of the times, with leprosy, and that he was sent by the master to the King of Israel, at the instance of the captive Hebrew maid, to be cured by Elisha the prophet. "So Naaman came with his horses, and with his chariot, and stood at the door of the house of Elisha." Perhaps in his heart he expected failure, and expected it the more that he had pictured to himself just what steps the prophet would take to cure him. When, then, instead of coming down to meet him in person, Elisha left him standing with his retinue at the door, and sent word to him that he should go and wash in Jordan seven times and he would be clean, Naaman turned and went away in a rage, saying, "Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel? May I not wash in them and be clean?" And it was only when his servants pointed out to him the folly of his childish passion, saying, in effect, "If the treatment does you no good, it will do you no harm," that he consented to the prophet's

conditions. Consent he did, however, and not only was he cured, but he promptly became a convert to the true faith, and one may suspect that he would have been willing to accept any proposition that Elisha had chosen to offer. This parable, as one may call it, is instructive in many respects besides that of indicating the power which the physician acquires over his patient through his success in treatment. It illustrates strikingly with what complex feelings the patient goes — half trusting, half doubting — to see the doctor, and illustrates, too, how the doctor is sometimes put to his wits to see that he does not discount his authority with the patient by letting him dictate the details of the treatment.

I permit myself to say, however, that such an enforcement of conditions, unmeaning in themselves, although it is an effective device and often a necessary one, represents a means of maintaining authority which every physician should try to eliminate more and more as the relations between himself and his patient become established on a more natural basis. We must cure our patients if we can, even if it is necessary to put on the manners of the Grand Pasha, or to hold ourselves as remote as the Mikado; but, on the other hand, something may be risked in the interests of directness and simplicity.

Where simple encouragement and explanation fail, it is often possible to induce the patient, by coaxing or training, to do something which even he must see that he could not have done if his own diagnosis had been correct. If, for example, he has lost temporarily the power to move a limb in a certain way, he can perhaps succeed, under assistance and supervision, in making a sudden motion which will include the lost movement, among others; and then he can be taught to analyze his sensations and to differentiate his efforts. Even pain (in suitable cases) may gradually be cast out if the patient is encouraged to note that "this time," or "that time" it was less severe, until he learns to have an alternate picture of himself as free from it, which at first he did not have. Fortunate it is if the patient can be led to take interest in the "habit" theory, and still more fortunate if he takes to himself the credit of the cure.

Where all these means fail, the physician must make his influence strike deeper. He must himself recognize that one reason for the persistence of habits is that they represent the active intervention of a portion of our consciousness which lies outside the field of our personal attention; beyond the direct reach of our personal will. This hidden consciousness, that plays so active a part in causing our morbid acts, is no stranger, but on the contrary an old friend. The power that thrusts an obnoxious act or thought into the current of our lives is closely related to that power that notes the flight of time during the night, waking the nurse at the appointed hour, or to that which tosses up to us the memory of a forgotten engagement — sometimes, alas, too late — as a chip is tossed up by an eddy in the stream. In the technical language of the day, this power is called "our subliminal consciousness," that which works "below the threshold" of our personal attention. I prefer myself to call it the "sub-personal (or extra-personal) consciousness," but it will be better if you will forget names and seek in your practical experience the warrant for the truth of what I say.

(To be continued.)

Original Articles.

THE "RIGHT-ANGLE" CONTINUOUS INTESTINAL SUTURES.[1]

BY HAYWARD W. CUSHING, M.D., BOSTON.

THE ideal intestinal suture is the one which combines greatest rapidity in formation with maximum security from extravasations of intestinal contents. To fulfil these requirements there must be exact adaptation of wound edges and an accurate apposition of serous surfaces; also simplicity in construction, since ease in application means rapidity in operating, and adaptability to general use demands a technique uncomplicated, readily understood, and requiring only such materials and instruments as are commonly at hand, or easily to be obtained.

A short experience usually demonstrates that "continuous" sutures have a great advantage in regard to the ease and rapidity with which they can be inserted. The time spent in knotting a fine wet thread, with fingers sticky with blood, in an intestine difficult to hold as a wet rag, is surprisingly long.

It is true that some other sutures are usually firm, accurate and handsome; but the extra time required to tie twenty or thirty knots is a very important factor in the success of an operation when the patient is rapidly approaching collapse. The result of my observations is that an intestinal wound can be closed from one-third to one-half more rapidly with a continuous suture than by any other form I am cognizant of. In 1886, after many experiments, and an extended investigation of the best sutures then known, I was convinced that the method I then described as the "Right-Angle" continuous was the most satisfactory, other methods being discarded on account of their complex character, or the length of time and especial appliances required for their formation.

The "right-angle" continuous suture is a modification of the Kürschner, or the "continuous Lembert." It has been called by some surgeons a modified "Appolito." It excels not only in neatness of appearance, but also in accuracy of wound union. It is not only continuous but is also a "buried" suture, reducing adhesive inflammation to a minimum. It can, with some practice, be applied easier than other sutures. It can be applied *more rapidly than other sutures* with scarcely an exception — a point of great importance. One of many trials is the following: Resection of human ileum; Lembert sutures required fifteen minutes; the continuous "right-angle," two experiments, five and nine minutes. I have united a resected ileum in the living human subject in eight and two-thirds minutes. With this suture the greater the distention of the intestine the closer the edges of the wound are approximated. It can be interrupted at any point, if desired. It can be reinforced by another superimposed, if any point seems insecure either by itself or an "interrupted Lembert."

Its disadvantages are that its technique is not so readily learned as some; for example, the "Lembert." Again, it has been claimed that if there is much intestinal distention constriction occurs, with resulting obstruction to blood circulation and recoveries. I have found no record of such a result from a continuous

[1] Presented at the twentieth meeting of the American Surgical Association, Chicago, June 2, 1899.

suture. In my own experiments on living intestine or clinical observations it has not occurred. It is rather an advantage, since the constricting circle is during distention more deeply buried (Fig. 1), thus approximating more extensively the inverted serous surfaces through whose union, mainly, fecal extravasation is averted. With the Lembert the reverse is true. The sutures separate as the intestine distends and its circumference increases. The inverted edges become narrower by this stretching and are in danger of everting and prolapsing outward between the sutures. Fecal extravasation is then possible.

In regard to septic infection and suppuration along the track of the suture while being cast off into the lumen of the intestine, I know of no case where this has occurred. The experiments on animals show that the sutures may be partly exfoliated and hang free in the lumen of the intestine without causing septic inoculation of the wound, which has united long before the suture is thus freed, which requires from two to three weeks.

After an extensive review of the literature of the subject, careful and extended experimentation with living animals, practical tests and experiments with various sutures in the dead human intestine, and from personal observation during years of hospital service I concluded that the most satisfactory sutures in most cases was the "right-angle" continuous, reinforced by a similar one superimposed; or by an "interrupted Lembert," if isolated points only require to be secured. If the suture is properly made, this reinforcing will be, as a rule, unnecessary. The reasons for this conclusion are:

(1) The suture does not involve the mucous membrane.

(2) The intestine is closed by a suture which acts so that the greater the tension to which it is subjected the closer it is drawn.

(3) It can be inserted very rapidly and easily.

(4) The closure of the intestine is impervious and efficient.[2]

(5) Its technique is simple.

In proof of the efficiency of this suture I desire to report a few results, recently collected, where it has been used by other surgeons [3] than myself. It is not a complete report of the clinical history of the method, for I have as yet made no effort to obtain such. I readily obtained records of twelve cases (including one case of rupture of the bladder), which include four resections,—two cecum, one ileum, one not stated,—four wounds, tears, ruptures or stabs, — one case, nine wounds of small intestine, — two fecal fistulæ, one stomach anastomosis.

Of these patients 75 per cent. recovered. In the fatal cases the wound was found closed or united in all except one, where the cause of death was pulmonary embolism. Here there had been distention of the intestines, so extreme that several of the reinforcing layer of Lembert sutures had been torn out. The "right-angle" suture had also torn through at this point. These are not selected cases, but are reported as they were collected. Some of the patients, exclusive of the fatal cases, were desperately ill.

[2] In hydrostatic tests during experimental work the intestine ruptured at other points, usually along its mesenteric border, before the suture tore out enough to permit leaking.

[3] These results are from the records of Drs. H. L. Burrell, F. S. Watson and J. C. Munro, through whose courtesy I am able to report them.

The length of time to close the intestine is interesting.

For the tears and wounds, that is, longitudinal sutures, the average was six and one-half minutes. One wound, two inches long, was closed in two minutes. One, two inches long (operation fecal fistula), required fifteen minutes — the maximum. The resection wounds averaged ten minutes without the reinforcing suture. In one case the second continuous suture was placed in four minutes. I therefore think it is fair to assume that the above data demonstrate that one can expect to close, with this suture, an ordinary intestinal wound or tear in six to seven minutes, or unite a resected gut in ten minutes. That when so united it will hold, if not better, at least as well as the best methods we now have at our command.

The technique of the perfected "right-angle" continuous suture is as follows: For uniting longitudinal wounds it is inserted as shown in Figs. 2 and 3. The most satisfactory results are obtained in the human intestine by placing the points of puncture one-eighth of an inch (3 millimetres) apart, and by burying the suture to the same extent in a direction parallel to, and three-sixteenths of an inch (4–5 millimetres) distant from, the wound edge. The needle traverses the tough fibrous submucous layer, and is not intended to involve the mucous membrane or penetrate the intestinal cavity. Each stitch of the suture should be drawn tight, so as to accurately appose the wound edge before the next is set.

A resected intestine is united by the same suture, but formed as follows: It is begun at one side of the mesenteric attachment by an inverted Lembert suture, which is tied, and the free end (Fig. 4*a*) left pendent from the knot.[4] The resected edges are now united by the "right-angle" suture, which is inserted in the same manner as in a longitudinal wound, commencing at the point of union already made, crossing the mesenteric attachment (Fig. 5) and continuing along parallel to the resected edges of the gut, till the free end (Fig. 4*a*) at the point of commencement, is reached. Care should be taken not to increase the distance of the suture from the resected edge, thus inverting a wider border. The suture also should not be drawn so tight as to pucker or diminish the intestinal circumference. The union of the "terminal" end with the "initial" free end (*a*) by a square knot (Fig. 6) completes the suture, the (free) ends of which are now cut close to the knot (if silk, one-tenth inch, 2 millimetres, long), which sinks out of sight between the approximated serous surfaces. The completed suture presents the appearance shown in Figs. 1 and 7. The mesentery is united by inverted Lembert sutures, interrupted, set on each peritoneal surface (Fig. 7). A very thin mesentery is best sutured by an ordinary interrupted suture. Continuous sutures, when of any length, have been found at autopsy to have relaxed and allowed the mesenteric wound to separate.

For the suture I use the finest white silk, "Machine

[4] By commencing the suture at one side of the mesenteric attachment as above described (Fig. 4*a*), that portion of the wound is united first, and at a time when it is most accessible. The advantage of this is self-evident, since this is the most difficult point to unite securely, and at which fecal extravasation is most apt to occur. Also when completing the suture the operator can make the last few stitches and tie the final knot in full view, at a point easily accessible, instead of at one so concealed and difficult of access as that portion of the wound about the mesenteric border, the site frequently selected for the completion of an intestinal suture.

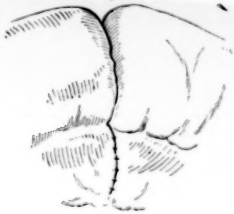


FIG. 1.

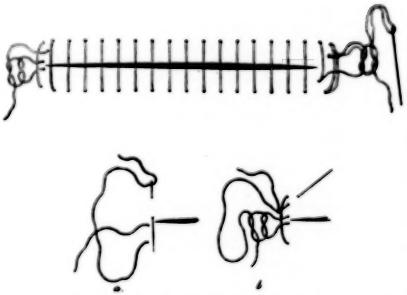


FIG. 2. Diagrammatic. Actual size, as in human ileum. Peritoneal surface. *a–b*. Plan of suture at commencement of insertion.

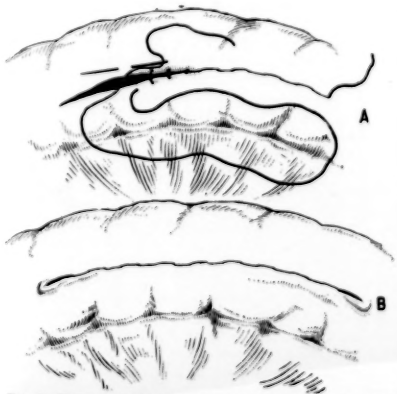


FIG. 3. Ileum. Peritoneal surface. A. Suture in various stages of its formation. Note the direction of the needle inserted parallel to the wound instead of at a right angle to it, as in the Lembert and many other sutures. B. The completed suture. No knot or suture visible.

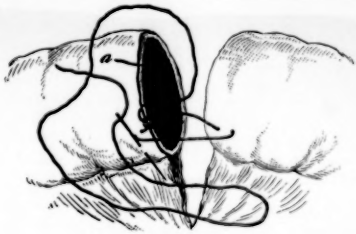


FIG. 4.

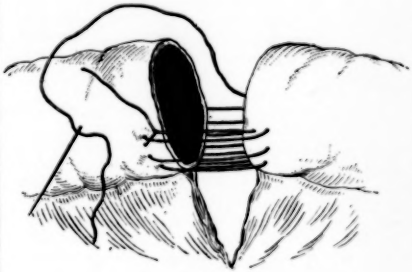


FIG. 5.

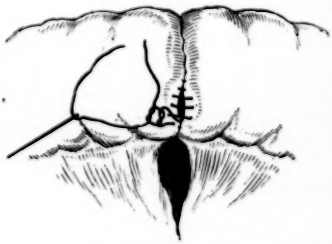


FIG. 6.

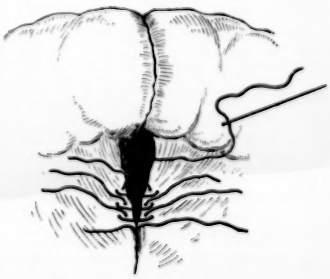


FIG. 7.

twist," J. D. Cutter, No. 000, sterilized by boiling, preserved in sublimated (one-tenth per cent.) alcohol (95 per cent.).

The best needle is a "self-threading" or "spring-eyed" round sewing-needle, one and one-sixteenth inches long. By having this ground flat like a "Hagerdorn," an instrument is obtained which combines all the advantages of the round needle usually used, and is far superior to it, on account of the ease with which it traverses the intestinal wall.

THE EXAMINATION OF STAINED SPECIMENS OF BLOOD IN ITS APPLICATION TO CLINICAL WORK.[1]

BY HENRY F. HEWES, M.D., BOSTON.

(Concluded from No. 2, p. 41.)

A STUDY of the white corpuscles of blood may, like that of the red, be of considerable importance in connection with the study of our clinical cases. As we have described, in normal blood the leucocytes are present in a certain definite number, the limits of the normal variation being, in the fasting condition, between four and eleven thousand per cubic millimetre of blood. This total number is made up of three and only three distinct types of leucocyte, the distinguishing feature of each type being the staining reaction of the granular cell protoplasm. Each of these three types of leucocyte is present in a certain proportion one to the other. The changes in the characteristics of the leucocyte picture which we find in pathological conditions include variations in one or all of the above conditions or essentials. That is, we may have abnormal varieties of leucocytes in the blood or an abnormal proportion of some one of the normal leucocytes, or an abnormal number of leucocytes present in the blood (the peripheral blood).

There are several forms of leucocyte found in the blood of pathological conditions which are never seen in normal blood. Of these there are two forms which may in the present knowledge of pathology have a practical significance for us in clinical work. These are the two forms of *myelocyte*, the neutrophilic and oxyphilic.

The *myelocytes* are so called because they resemble, and probably are, cells native to the bone marrow. These myelocytes resemble to some extent the normal neutrophiles and oxyphiles, which are in all probability developed directly or indirectly from them or similar cells. They differ from these normal leucocytes, their derivatives, however, in several characteristics, of which the chief is the character of their nuclei.

The normal neutrophile (the polymorphonuclear neutrophile) with its ameboid character has an irregularly-shaped nucleus. It may be horseshoe-shaped or may appear as several nuclei (polynuclear leucocyte). It is never round (practically).

The neutrophilic myelocyte is a round nuclear, neutrophilic cell. The nucleus is spherical, of less intense stain than that of the normal neutrophile. It occupies, as a rule, three-fourths of the cell, and is well marked off from the surrounding protoplasm. The protoplasm is studded with neutral-staining lilac granules, similar to those of the normal neutrophile. In size this cell is, as a rule, large, but it may be of any size. It is non-ameboid. This cell is found in health in the red marrow of the bones. According to Ehrlich, here these cells can be found in all stages of development from basophilic tissue cells, and here also may be seen all stages of development of the normal neutrophile from these myelocytes. In this connection it is interesting to note that myelocytes in the blood can by appropriate staining frequently be made to show both neutral and basic granules in the protoplasm, while with the same staining process the normal neutrophile shows the neutral granules alone.[8]

The differences between the oxyphilic myelocyte and the normal oxyphile are on the whole the same as those distinguishing the neutrophile. The granules of the oxyphilic myelocyte are, however, much larger and darker staining than those of the normal cell.

Neutrophilic myelocytes may occur in the blood of a considerable number of pathological conditions. They are generally present in small numbers wherever a neutrophile leucocytosis occurs, as with the leucocytosis of infectious diseases, suppuration, etc. That is, apparently in the exodus of the marrow stores of neutrophiles in response to the chemotactic influence present in these conditions, some of the myelocytes are carried out. In rare cases of pneumonia and diphtheria as many as 10 to 15 per cent. of the cells have been found to be myelocytes. This myelocyte is most in prominence, however, in conditions of myelogenous leukemia. Here it occurs in such numbers, often 20 to 50 per cent, and associated, as a rule, with so great an increase in the total number of leucocytes that a pathogneumonic blood picture of myelocytosis is presented.

The oxyphilic myelocyte is found in the blood in cases of myelogenous leukemia. It is rarely found in other conditions.

There is one cell which occurs in small numbers in normal blood, which is found in considerable numbers in some pathological bloods. This is the mast cell. This cell is a basophile with this modified Ehrlich method of staining, and we do not distinguish it from other basophiles in our classification. The mast cells are large cells with a fragmented or three-lobed nucleus and a protoplasm studded with large basic granules. This cell is a common feature of the blood of myelogenous leukemia.

An actual increase in the number of leucocytes in the blood is a symptom of a great variety of conditions. Such an increase is almost invariably associated with a relative as well as an absolute increase of a particular form of leucocyte. A relative increase in the proportion of one or more normal or abnormal forms of leucocyte, occurs in a great number of conditions. It may or may not be associated with an actual increase in the number of leucocytes. This subject of the absolute and relative increase of the various leucocyte forms will be taken up in the study of leucocytosis.

In its broadest sense the term *leucocytosis*[9] means an increase in the blood of the actual number of any of the several varieties of leucocyte. Such a condition may occur with or without an actual increase in the total number of leucocytes. It is rare, however, that the existence of a leucocytosis, unaccompanied by an increased total number of leucocytes, has any distinc-

[1] Introductory lecture to the course in hematology at the Harvard Medical School.

[8] Normal neutrophiles have sometimes basic granules, but it needs a stronger basic stain to color them.

[9] Several writers, as Cabot, restrict the term leucocytosis to the condition in which there is a proportional increase in the number of normal neutrophiles in the blood, but its general application is as given above.

tive significance for purposes of clinical diagnosis. In our study of the leucocytes in connection with clinical work, therefore, we are interested principally in those conditions in which we have an actual increase in the total number of leucocytes.

These leucocytoses may be physiological or pathological.

Physiological leucocytoses are slight increases in the number of leucocytes occurring under the influence of physiological conditions, as during digestion, or exercise, or in pregnancy. Such leucocytoses show either an unchanged differential count or an increase of neutrophiles — a neutrophilic leucocytosis. (I have seen digestion leucocytoses with a normal differential count, others with a neutrophile leucocytosis.) The influence of such conditions can be excluded in a given case by proper choice of the time for taking the blood.

The pathological leucocytoses show some variation in the proportion of some normal or abnormal form of leucocyte. They may be classified in accordance with the nature of the leucocyte to the proportional increase of which the actual increase present is principally due.

In a classification formed upon these lines we have the following forms of leucocytosis:

(1) Basophile leucocytosis.

(2) Neutrophile leucocytosis. (*a*) Polymorphonuclear neutrophile leucocytosis; (*b*) round nuclear neutrophile leucocytosis (myelocytosis).

(3) Oxyphile leucocytosis.

In the basophile leucocytosis the actual increase of leucocytes is due principally to a proportionate increase of basophiles.

The marked increase in the total number of leucocytes with a high differential proportion, 50 to 95 per cent., of basophiles is the distinctive feature of the blood of the disease known as lymphatic leukemia. In this condition we may see many morphological forms of basophile in the blood, round nuclear, polymorphonuclear and apparently polynuclear forms, often of all sizes.

A basophile leucocytosis may, however, occur in several other conditions — but except in children it is, leukemia excluded, rarely associated with any marked increase in the total number of leucocytes. A simple proportionate increase of basophiles is found in pernicious anemia, rhachitis, typhoid fever, and many conditions of inanition and anemia. As we have said, where it is not associated with an actual increase in the number of white corpuscles, no great importance, in the present light of medical knowledge, can be attached to it. Children under ten years of age have normally a per cent. of basophiles running between 50 and 80 per cent., the proportion decreasing with the age. In a child it is not rare to get an increased white count with basophile leucocytosis as a secondary feature of many diseased conditions.

In a neutrophile leucocytosis the actual increase may be due to a proportionate increase of either of the neutrophilic cells which occur in blood, the normal polymorphonuclear neutrophile or the neutrophilic myelocyte. Often both types share in the increase.

In the vast majority of neutrophile leucocytoses, such as occur with infectious diseases, with suppuration, etc., the increase is almost entirely in the normal polymorphonuclear type. The number of myelocytes present in these cases rarely exceeds one per cent. In a few cases of pneumonia and diphtheria they have been reported as high as 10 to 15 per cent. But as a rule in these leucocytoses it is evident that the normal neutrophile is the prominent factor in the condition, the myelocyte being but incidental in the picture. This is the type of leucocytosis which is most common. The term leucocytosis is limited by some writers to this type (Cabot).

In one type of neutrophile leucocytosis, however, we meet with a very different picture. Here, although both forms of neutrophile are greatly increased in number, the myelocytes are prominent in the picture. This is the leucocytosis associated with the condition known as myelogenous leukemia. Here we have as a rule a very great increase in the total number of leucocytes, much greater than is the rule in the common neutrophile leucocytosis. And in every field we find myelocytes — so that these cells often form in the differential count from 15 to 50 per cent. of all cells present.

The normal neutrophiles, on the other hand, though their number is actually increased, show a diminished relative number, their per cent. often falling to 30 or 40 per cent.

Although, as you see, it is impossible to draw an absolute line between these two forms of neutrophile leucocytosis on paper, both being mixed leucocytosis, yet it is seldom difficult in practice. Thus we cannot say that all neutrophile leucocytoses with less than five per cent. of myelocytes are simple secondary leucocytosis, while all with over five per cent. are myelogenous leukemia. But one quickly comprehends in a given case whether the myelocyte is the important factor or merely an incident in the condition.

There is a general picture in myelogenous leukemia — leucocytosis with myelocytosis and anemia — which is characteristic. Blasts are often plentiful. Mast cells are commonly seen, as are several abnormal forms of leucocyte other than the myelocyte. In addition, the oxyphile cells, which are relatively and actually decreased in a simple neutrophile leucocytosis, are actually and sometimes relatively increased in myelogenous leukemia.

In an oxyphile leucocytosis (eosinophilia) there is an actual increase in the number of oxyphiles in the blood. In myelogenous leukemia this increase is due in great part to the presence of oxyphilic myelocytes in the blood. In all other conditions of oxyphilic leucocytosis, however, with very rare exceptions, it is the number of normal polymorphonuclear oxyphiles which is increased. This oxyphile leucocytosis is found in a variety of conditions. It is found in asthma, pemphigus and several skin diseases, helminthiasis and as a post-febrile phenomenon. (Scarlet fever is the only acute febrile condition in which it occurs during the febrile stage.) It is found in trichinosis. Here 50 per cent. of oxyphiles have been reported. An actual increase of oxyphiles is said to be always present in myelogenous leukemia. As stated here, we find the oxyphilic myelocyte present increasing our oxyphile count. In these cases of oxyphilic leucocytosis the actual increase is not always accompanied by a relative increase. This is notably the fact in leukemia, where the great increase of neutrophiles is out of all proportion to the increase of oxyphiles.

To determine the existence of this actual increase in a particular form of leucocytosis it may be necessary to carefully count a given number of microscopic fields,

as measured by a micrometer eye-piece. For the details of calculation of the number of leucocytes by this method the reader is referred to Ehrlich.[10] It is rarely necessary to resort to this method for purposes of clinical work.

The characteristics of a given form of leucocytosis, the increase in number of leucocytes and the variations in kind and proportion can be recognized with facility by the method of examination of stained specimens. To judge of the presence of an increased number, some practice in estimation of these stained specimens may be necessary. Frequently the increase is so marked that one is aware of it at a glance. Where the increase is slight, however, or less than 100 per cent., that is, where the number of leucocytes per cubic millimetre is less than 15,000 to 20,000, a careful estimation of the slide is necessary. To properly carry on such work we should have practice in the examination of even spreads of normal blood and of blood possessing various degrees of hyperleucocytosis. With such training one can judge of the existence of even a moderate increase, a leucocytosis of 15,000, with fair accuracy, and even approximate the actual count. In estimating this question of a leucocytosis and its extent in doubtful cases it is best to count systematically the number of leucocytes in a given number of microscope fields upon your specimen and compare this record with that made from a specimen of normal blood spread with same thickness, and perhaps with records of specimens of bloods with varying degrees of leucocytosis, which have been obtained by white counts.

By a comparison of the findings on your given specimen with records of the findings of the preparations of blood containing 5,000 or 8,000 or 11,000 leucocytes per cubic millimetre, the normal variation, you can tell whether the number of leucocytes exceeds these limits or not. Also, after practice of the same kind in recording the findings of specimens in which different degrees of leucocythemia are present, you can judge by comparison of your actual number of leucocytes in your case. In cases where the finding leaves you in doubt a white count can always be made. Frequently, however, all that you desire to know is whether an increase exists or not. At all events even with moderate practice your cover-slip examination saves you the trouble of a count in many cases by showing a normal condition; it gives you positive evidence of a hyperleucocytosis in cases where the increase is marked; it gives you at the same time that it reveals the leucocythemia the diagnosis of the kind, whether basophilic leucocytosis, leukemia, etc., which the white count does not do.

It is not the purpose of this lecture to enter into a discussion of the theoretical side of the physiology and pathology of blood. Some consideration, however, of the present views concerning the origin of the leucocytes and of the mechanism of the production of the various leucocytoses may be useful in preparing for a clearer understanding of these leucocytoses in practical work.

Our knowledge concerning the origin of the leucocytosis of blood is very unsatisfactory. In regard to this question there are two principal theories:

The first is that the three common forms of leucocyte, the basophiles, neutrophiles and oxyphiles, represent different stages in the life development of a single cell, which begins its existence in the blood as a basophile (lymphocyte) and there develops to a neutrophile and finally to an oxyphile. It is not necessary by this theory that the development occurs generally in the blood. It may occur in part in certain centres where the basophiles are carried and from which they emerge as neutrophiles. But the single line of origin is maintained. The seat of origin of the original basophile is considered to be in part the lymph glands and in part the bone marrow.

The second theory is that the different forms of leucocyte originate separately in several centres and enter their blood existence as basophiles, neutrophiles and oxyphiles, full-fledged.

According to the promoters of this theory, the basophiles enter the blood principally from the lymph glands, wherever found, in the intestinal membranes, spleen, or lymph channels; in small part from the bone marrow. The neutrophiles originate exclusively from the bone-marrow centres, where they are formed from original basic cells, passing in their development through the stage of the round nuclear neutrophile or myelocyte, and becoming finally ameboid polymorphonuclear cells. The oxyphiles also arise in the bone marrow through a process similar in its features to that of the neutrophile.[11]

By either theory the centres of origin are almost exclusively the bone marrow and lymph glands, the spleen playing a very unimportant part in the manufacture of leucocytes.

The myelocytes originate in the bone marrow.

The mast-cell basophiles originate in the marrow from tissue cells and may also to some extent be formed from connective-tissue cells elsewhere.

There are also two views in regard to the actual process of leucocytosis: The first is that all forms of leucocytosis represent an actual increase in the numbers of leucocytes of one or more particular types of leucocyte in the blood.

The second theory divides the leucocytosis into two classes. In the first class, including such leucocytoses as occur in the leukemias, there is an actual increase in one or several forms of leucocyte in the blood. In the second class, including the common neutrophile leucocytosis of suppuration, infectious diseases, etc. (the leucocytosis of Cabot), there is merely a change in the distribution of the leucocytes already in the blood, great numbers of neutrophiles being attracted from the internal to the peripheral circulation.

According to Ehrlich, the influences which govern the process of leucocytosis are of two distinct kinds, as follow:

The leucocytoses in which the ameboid forms of leucocytes, the polymorphonuclear neutrophiles and oxyphiles, are increased are as a rule brought about by chemotactic influences. The toxin of bacterial infection, etc., attracts these cells forth in greater numbers from their centres of development, perhaps stimulates their development.

The influence which brings about the leucocytosis with an increase of the non-ameboid cells, the basophiles, as that of lymphatic leukemia, is a mechanical one. There is an increased production of these cells in the blood centres, an increased flow of lymph through them, and great numbers are swept into the blood stream.

[10] Die Anemie, p. 20.

[11] Klein, Cent. f. Inn. Med. 1899, believes that all oxyphiles are developed from other leucocytes by the laying down of granules formed from broken-down hemoglobin.

The leucocytosis of myelogenous leukemia is principally mechanical, but perhaps also due to some extent to a combination of both influences — a mixed leucocytosis in the sense of its causation as well as in the nature of its cells. Some morbid process, in some cases perhaps chemotactic influences, may stimulate excessive development of cellular elements in the bone marrow. With the increased activity, numbers of cells are swept into the blood stream, both myelocytes and ameboid neutrophiles. Chemotatic influences may also here be a factor in attracting the ameboid cells to the blood.

Evidences of special chemotaxis, the attraction of the toxins (?) of special conditions for special forms of leucocyte, are numerous. Thus in cases of lymphatic leukemia where the blood contains 95 per cent. or more of basophiles, in which some suppurative process develops locally, the pus contains neutrophiles as in cases where the blood content is normal. In a case of Duhring's disease reported by Leredde and Perrin the exudate fluid of the vesicles, which had contained oxyphiles only, became infected with bacteria, upon which the oxyphiles of the exudate were replaced by neutrophiles. Neusser, in a case of pemphigus in which the vesicles contained oxyphiles, induced by a vesicant an inflammatory process in several vesicles, whereupon the cell contents of the vesicles changed from oxyphiles to neutrophiles.

This review of the method of the examination of the stained specimen of blood, the description of the appearances of the corpuscular elements of blood in the normal individual or under the influence of various pathological conditions, as studied by this method, indicates clearly, I think, the general lines of usefulness of this method in clinical work.

In the first place, we are able by the application of this method to diagnose the existence of an anemia in a given case; to estimate the severity of that anemia and to determine its type. The appearance of degenerative changes in the red corpuscles, of achromia or poikilocytosis one or both, at once proves to us the presence of an anemia. The extent of these changes, the appearance or non-appearance of blasts, aids us in determining the severity of the condition.

Having thus determined by inspection the existence of an anemia, we next determine its type, whether pernicious anemia or secondary anemia.[12]

The characteristics of the blood of pernicious anemia are (1) a marked poikilocytosis, with a tendency to an average increase of size in the red corpuscles, and (2) the presence of blasts, of which the greater number are megaloblasts. Achromia is rare, though it may occur. If, therefore, in a careful study of several specimens we find such a poikilocytosis, and nucleated reds present in small or large numbers, and in a count of these blasts find more megaloblasts than normoblasts, we diagnose pernicious anemia.

Some, but slight, confirmation of this diagnosis can be obtained by the finding of a normal or increased color index, from a comparative estimation of the hemoglobin and the number of red corpuscles present.

[12] It is possible also from our blood finding to divide the secondary anemias into two types. Thus if in an examination of our specimen we find that achromia is the predominant degenerative condition, out of all proportion to the poikilocytosis or other changes, we may diagnose a chloranemia — an anemia in which the color index is very low. This determination can be confirmed if necessary by an estimation of the hemoglobin and a count of red corpuscles, to determine the actual loss in hemoglobin and the color index. But for the simple diagnosis of the condition the slide examination will suffice. This is the type of blood which is found in the disease of young women known as chlorosis.

If in our anemia we do not find a megaloblast type of blood, we have a secondary anemia.

This separation of the anemias into two types by the blood findings is of course an artificial separation. All anemias are secondary; but we can pick out from the many forms one which has in its blood finding a distinctive picture which enables us to classify it by itself. Pernicious anemia, as is clear from our descriptions given earlier of the origin of normoblasts and megaloblasts, is merely a term for a condition of anemia in which the blood-forming centres have reverted to a considerable extent or wholly to the embryonic type of formation of the red corpuscles. This condition may be brought about by several causes. One cause, the infection of the body with the parasites, as the bothriocephalus latus, or the ankylostoma duodenale, we know and can remove. And in such cases the marrow resumes its normal condition and the patient recovers. As to all other causes of this condition we are in the dark. We do not understand their nature and cannot remove them. And it is a matter of experience that all cases with a blood finding of this megaloblast type are progressively fatal. Therefore when we find such a blood we pronounce a case, unless it be one of infection with the before-mentioned parasites, as one of pernicious anemia. The distinction is a thoroughly useful one for purposes of diagnosis and prognosis. I have never seen a case with a blood of this type recover ultimately and know of no such case in literature (except the parasitic cases mentioned).

It is of course impossible to point out here just what the cases are in which the knowledge of the presence or absence of an anemia may be of special importance for diagnosis. But they are many, and since the method determining this fact is so simple it should be investigated wherever there is the least occasion for such a step.

The evidence of anemia which one finds in a large per cent. of cases investigated and found anemic consists in the presence of some achromia, with some distortion in form and size. As a rule the number of corpuscles is normal in such cases. The hemoglobin is, however, reduced. And it should be remembered that the existence of a very mild anemia can sometimes be discovered by this hemoglobin estimation when it is not apparent upon the stained specimen. Anemia is not therefore to be ruled out except by a hemoglobin estimation (specific gravity). If it is of any significant extent, however, it will show in the stained specimen.

In the second place, we may by this method discover the existence of a leucocytosis and differentiate its particular type.

Thus by finding a neutrophile leucocytosis with a considerable proportion of myelocytes we may diagnose myelogenous leukemia, a marked basophilic leucocytosis, lymphatic leukemia.

If we find an unmixed neutrophilic leucocytosis we know that we have present one of the conditions with which this leucocytosis is associated and we can rule out all conditions which do not have a leucocytosis. Such a finding may help us in a given case to differentiate pneumonia from phthisis, suppuration or pyemia from malaria, appendicitis from typhoid, scarlet fever from measles, to diagnose the existence of suppuration, hemorrhage or certain acute infectious diseases, to rule out typhoid or malaria.

If we find an oxyphilic leucocytosis we are led to

consider some condition thus accompanied, as trichinosis, leukemia.

If our blood slide leads us to suspect an increase in the number of leucocytes, and we wish to estimate the exact number, we can make a white count. Where the number appears normal we gain our knowledge without this trouble.

In the third place, we may discover by this method the presence of blood parasites, the plasmodium malariæ, the filaria sanguinis hominis, the spirillum of relapsing fever. It is customary to look for these parasites in the fresh specimen, where they are seen alive. But it is perfectly possible to discover them in stained specimen.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

ON THE RELIEF OF SUFFERING IN LABOR.

W. S. FOTHERGILL,[1] of Manchester, Eng., says that he is convinced that far more than half the actual pain which is suffered in this world is borne by parturient women, and that pain of this kind receives less attention than any other form of suffering. This occurs although relief of pain is one of the first duties of the physician and the thing for which he is usually summoned. The amount of pain during parturition does not depend upon the difficulty and danger of the labor. Many normal confinements are most painful, while, on the other hand, women in great danger often suffer little. Prevention of suffering during labor is accomplished by having the patient in excellent physical condition, giving her plenty of sleep, as much exercise as possible in the open air short of absolute fatigue, ordering nourishing food, only as much as is necessary, frequent baths, avoiding alcoholic drinks and late hours. Constipation must be prevented. Ordinary corsets and garters must be discarded. Walking is the best general exercise. The ordinary ailments occurring during pregnancy should be treated more by rest and less by drugs than under usual circumstances. False labor pains which often occur are more irregular and more continuous than true labor pains. They cause real suffering, and are usually caused by overloading the rectum. Large enemata, two or three, are given for these if necessary, and the patient put into a large hot bath for ten to twenty minutes. Abdominal applications of mustard, sedatives and opium may then be given if necessary.

During the first stage of labor the use of the hot bath and the rectal enema are equally as useful as in the treatment of false pains. His advice is to keep the patient immersed in a hot bath during the greater part of the first stage, with the view of helping the cervix to dilate and of relieving the pains. Friction over the abdomen, application of a binder, change of posture, quinine in five-grain doses, hourly, for three or four doses, are found to strengthen the uterine contractions without increasing the pain. In the first stage, when the patient is becoming nervous and exhausted, and there is little progress made in the dilatation of the cervix, if it is thought best to give the patient rest by sedatives in place of artificial dilatation, he then first administers a little chloroform, just enough to abolish the patient's reflexes, and follows this just before the patient wakes by a hypodermic injection of morphia. She will then sleep on for some time, and will, on awakening, go on with her labor, feeling much better, and frequently a considerable amount of cervical dilatation will be found to have been accomplished unconsciously during her repose. For the nausea and vomiting often quite severe in the first stage, he applies a mustard leaf over the stomach and gives internally a mixture of chloroform, carbolic acid and dilute hydrocyanic acid in water.

During the second stage of labor anesthesia is produced in the usual way, that is, as the pain comes on the anesthetic is administered during a few respirations, without abolishing the reflexes or destroying the consciousness of the patient. This is continued until the birth of the head, when complete anesthesia is desirable. If pains do not come on regularly in the second stage, with one hand on the uterus rub the fundus of the uterus every three minutes until a contraction is brought on. In this way the labor may be quickened. Cramps during labor may be relieved by hard rubbing and massage done by the nurse. Pain in the back during contractions is much relieved if the nurse presses firmly on the sacrum. He protests against a too energetic manner of conducting the third stage of labor, because of pain from prematurely expressing the placenta. In suturing the perineum the pain is caused by the needle passing through skin and mucous membrane; therefore if the muscle and connective tissue are united without passing the needle through the skin or mucosa the operation is almost painless. Otherwise an anesthetic should be given for the operation. He advises chromicized catgut for perineal tears instead of silkworm-gut. After-pains may sometimes be avoided by allowing the patient from the first to turn over onto her hands and knees in passing water, thus allowing the uterus and vagina to empty freely. Severe after-pains require a little opium. Calomel is given as a cathartic, two or three grains, followed by a saline.

LYSOL POISONING FROM POST-PARTUM DOUCHE.[2]

The first fatal case from the use of a dilute solution of lysol is interesting because of the former claims for the non-toxic properties of the drug. The patient, a primipara, was delivered of a seven months' child after a short and normal labor, breech presenting. The patient first had a vaginal douche of four litres of a one-per-cent. solution of lysol, and the temperature rising shortly afterward to 102.2°, the uterus was irrigated with a similar solution. After an injection of one and one-half litres she became restless and comatose, with stertorous breathing and weak and rapid pulse. Irrigation was stopped, and the patient became conscious in a few minutes. The following day the patient was weak and jaundiced, and the urine contained albumin, blood and bile. Four days after there was frequent hematemesis, and the patient was much weaker, dying on the tenth day. The autopsy showed congestion of the dura and medulla, the liver was enlarged, the kidneys showed acute nephritis, and there was thrombosis of the right broad ligament and spermatic vein, and also endo- and para-metritis.

[1] Medical Brief, January, 1899.

[2] Centralbl. für Gynäk., No. 39, 189

COMPOUND INTRA-UTERINE FRACTURE OF THE FEMUR.

Wilson [3] reports the case of a woman, an epileptic, who bore a child, perfect except for a considerable shortening of the right femur. There was a cicatrix over the anterior aspect of the middle third of the right thigh, there having been evidently *in utero* a compound fracture of the femur, which had united at an obtuse angle. The angular deformity disappeared in the course of a few months and the bone became nearly straight, but with a good deal of shortening. Several theories are advanced for the cause of the fracture. One was that it was the result of an epileptic attack of the mother in the fifth month in which she fell against the stove, but there was no pain following the accident. Another theory was that the fracture was due to a possible blow from the husband, and another that during an epileptic attack the abnormal increase of muscular power of the abdominal muscles would be sufficient to hold the fetus as in a vice with the femur raised up in a position to receive an injury from the spasmodic contractions of the muscles. Writers on the subject of intra-uterine injuries concur in the belief that external violence to the maternal abdomen may fracture the bones of the child without injuring the elastic abdominal walls of the mother.

PUERPERAL SEPSIS TREATED BY CREDÉ'S SILVER OINTMENT.

Jones [4] reports a severe case of puerperal sepsis which developed after an operative labor with a retained placenta, which developed soon after delivery. On the sixth day the patient was curetted under ether, the uterus irrigated with lysol and packed with iodoform gauze without any improvement. From the ninth to the eleventh day the patient grew rapidly worse, having several chills, with temperature ranging from 110° to 105° and pulse very poor, from 120 to 140 per minute. The uterus was very tender, with a foul discharge, and there was profuse diarrhea. There was no peritonitis, but the patient's condition was regarded as desperate at this time. Later on the eleventh day the patient was given an inunction of Credé's ointment, between one and two drachms being rubbed into the inner surface of the thigh, and this was repeated the next morning and again daily for two days. On the morning after the first inunction the temperature had fallen to from 104° to normal, the pulse from 120 to 90 and the diarrhea had ceased. The patient seemed well except that the uterus was enlarged and tender and there was a profuse perspiration. All other forms of treatment were omitted when the inunction was begun, excepting only quinine and stimulants given internally. His observations agree with Credé's, that the general improvement is sudden and complete, resembling more the results from antitoxin in diphtheria than anything else. Credé has used the ointment in a considerable number of cases of various kinds. In local processes the inunctions are made as far as possible from the seat of the disease. In acute and recent cases one inunction every twenty-four to thirty-six hours is generally sufficient for the disinfection of the system, while in chronic cases it is necessary to repeat them morning and night for several days.

(*To be continued.*)

[3] American Journal of Surgery and Gynecology, October, 1898; American Gynecological and Obstetrical Journal, February, 1899.
[4] Obstetrics, February, 1899.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SECTION ON SURGERY AND ANATOMY, COLUMBUS, O., JUNE 6, 7 AND 8, 1899.

(Concluded from No. 2, p. 47.)

DR. BROWN, of Illinois, arose at this juncture and said: As a representative of the country doctor, who is a listener probably more than anything else, I want to say that this discussion, like every other surgical method in treating disease, leads one to believe that our magnificent surgical friends, Drs. Ochsner and Murphy, are getting on two sides of the question, when in reality they are not. The story I am reminded of is that of the student who was questioned by the professor concerning the treatment of a certain difficulty, as to what he would do — he would do this, and that, and the other thing. "If you didn't succeed then," asked the professor, "what would you do?" He replied, "I would send for you!" The country doctor cannot send for Dr. Ochsner and Dr. Murphy. I should be compelled to send for both of them, because they have two kinds of treatment. This treatment of cases of peritonitis is simply a matter of the individual case. When Dr. Ochsner goes to the bedside of a patient he will treat that individual case as he finds it, not as you discuss it here before these gentlemen. Dr. Murphy will do exactly the same thing. I know the treatment of Dr. Ochsner of depriving the patient of all nourishment is a good thing, but whether it will do all he says, I am willing to wait to see.

DR. MOORE, of Indianapolis, closed the discussion.

TEMPORARY LIGATION OF THE COMMON CAROTID ARTERY, DURING REMOVAL OF LARGE TUMORS ABOUT THE FACE, WITH REPORT OF A CASE.

This paper was read by DR. JOSEPH J. BRANHAM, of Baltimore. He reported a case of large sarcoma of the face and temporal region; excision; hemorrhage controlled by temporary closures of the common carotid artery by means of a compress and ligature. After operation the patient was up on the fifth day and out of the hospital on the eighth. The most important thing in connection with the case was the manner of controlling the hemorrhage during the operation; the size and position of the growth made excessive hemorrhage inevitable on attempting its removal.

DR. F. C. SCHAEFER, of Chicago, read a paper on

GOITRE: ANATOMY, PATHOLOGY, AND TREATMENT.

He reported seven cases, six of them representing the past year's operative work for goitre, and the other of a large goitre and exophthalmos. He said that there were two remedial agents that loom up so prominently before the profession that it might be of interest to name them: first, the product of the thyroid gland, and second the chemically pure iodine — the former of recent introduction; the latter having been used empirically, locally and internally for many years.

In discussion, DR. WAHRER, of Ft. Madison, Ia., said that he had a patient, a young lady, twenty-four years of age, feeble, with a large unilateral right-sided goitre, as large as a hen's egg. He gave her twenty-five grains of the desiccated thyroid daily, divided

into five doses, with the catophoric application of potassium iodide. The case was treated with marked success. With the continuous use of these remedies, the growth disappeared within five weeks.

In reply to the discusser's question as to the cause of its rapid disappearance, Dr. Schaefer said he thought it was due to stimulation by absorption.

The paper was further discussed by Dr. Levings, of Milwaukee.

Dr R C. Dugan, of Eyota, Minn., read a paper on

EMERGENCY SURGERY WITH ESPECIAL REFERENCE TO WORK IN THE HOMES OF THE POOR.

Discussed by Dr. Brown, Ill.; Dr. Lawless, Toledo; Dr. Rosenthal, Mo.

Dr. J. B. Murphy, of Chicago, read a paper on

INTESTINAL FISTULÆ.

It was very important to the surgeon, it was annoying, it taxed his ingenuity; as a rule it is the result of the surgeon's work. Bone is the most common cause of fistulæ; next is mural strangulation. He divided fistulæ as follows: *Intentional.* — Artificial anus (permanent), artificial anus (temporary), laceration of intestine, impairment of wall, division with scalpel or scissors, forceps, ligature, drainage-tube and packing, injuries in parturition, curettement through perforation of uterus. *Accidental.* — Criminal abortion, vaginal intestinal perforations, failure of union after enterectomy or enterorrhaphy.

In discussion, Dr. L. Crile, of Cleveland, asked what disposition, if any, he undertakes to make of fistula due to tuberculosis of the bowel.

Dr. Murphy replied, resection of the bowel, and recited a case reported by Dr. Körte, in which he operated something like eight times, removing a large portion of the ileum, all of the ascending and a portion of the transverse colon, and finally made an end-to-end anastomosis so as to sidetrack the intestine involved, removing it, and was successful in curing his patient.

Dr. D. L. Fairchild, of Clinton, Ia., read a paper on

SURGICAL TREATMENT OF ABSCESS OF THE LUNG.

He said pneumonia is now generally recognized to be an infectious inflammation of the lungs, due, in the majority of cases, to the influence of the diplococcus pneumonia of Fräukel. The disease pursues generally a well-defined course, marked by certain pathologic changes; once in about 50 cases it is said that the pathologic changes result in the formation of abscess. Among the complications may be found consolidation of the lung, hydrothorax, empyema or abscess. An abscess of the lung is a much more dangerous condition than an empyema, on account of the difficulty of surgical drainage. He reported two cases, one in a man weighing 250 pounds, who was attacked with croupous pneumonia two months previously. After operation patient made a rapid and uninterrupted recovery. The other was a case of a young man who had passed through a rather severe attack of pneumonia. Result, uninterrupted and rapid recovery. He recommended puncture of the suspected area by means of an aspirating needle; if pus is found it should be evacuated by free incision, resecting a rib, if necessary, to obtain sufficient drainage. He did not approve of irrigation, owing to the resulting distressing irritation of the lung.

Discussed by Dr. Levings, of Milwaukee, who advised the use of a short exploratory needle.

Dr. Murphy, of Chicago, spoke of the ease of operating for abscess of the lung with pleural adhesions.

SOME OF THE RARE FORMS OF HERNIA AND THEIR RADICAL TREATMENT.

was the title of a paper by Dr. R. Harvey Reed, of Rock Spring, Wyo., who spoke of gastric, umbilical, ventral, and labial hernia. He desired to show (1) that all cicatricial tissue must be completely removed; (2) that the most perfect apposition of the separated parts must be secured; (3) that strong, flexible, thoroughly sterilized and absorbable animal tissue should be used for subcutaneous sutures, and that non-absorbable, thoroughly sterilized suture should be used for approximating the integument; (4) that great care should be taken to avoid the possibility of necrosis by shutting off the normal blood supply, and thus not only preventing the absorption of the animal structure, but eventually causing the breaking-down of the adjacent structures, thus deprived of their normal blood supply, which is bound to complicate the case. After having tried different kinds of animal tissues, prepared by different methods for subcutaneous suture, he has obtained the best results from pyoktanine catgut, which he has prepared by his chief nurse under his personal direction. For over two years he has purchased his catgut in the raw form from a firm in New York, which experience has taught him furnished most excellent and reliable form of catgut, prepared first by immersion in ether for not less than four days, then wound on glass spools and immersed in solution of 1 to 1,000 of pyoktanine in absolute alcohol, after which the jar containing the alcohol solution of pyoktanine with the catgut is sterilized for one hour under pressure. Objection to other methods of sterilization is the overhardening of the animal tissues.

Dr. McRae, of Atlanta, reported a case of

DIAPHRAGMATIC HERNIA

which he operated, the result of a stab, penetrating the chest and diaphragm; the other was that of a negro woman who gave the history of having severe attacks of constipation for several years, resulting in obstruction.

Dr. Marcy, of Boston, spoke of the

INFUNDIBULAR PROCESS IN THE NORMAL DEVELOPMENT OF THE MALE SUBJECT IN HERNIA.

He reviewed diagrammatically the anatomy of hernia, with especial reference to the cord. He laid claim to the originality of the Bassini operation. Bassini does not claim to have made a single operation until 1884, while Dr. Marcy claims to have made contributions to this technic as far back as 1870. Speaking of the operation he said: "It makes no matter whose name it has, but I claim that the name be given to the nation whence the operation had its origin!" The material is non-essential, only it must be aseptic and absorbable, and when you have gained these two points you ought to have perfect union.

Dr. Freeman, of Denver, mentioned a case of hernia of the diaphragm, produced by a gunshot wound, seemingly only to penetrate the skin, but ex-

amination revealed a large opening in the chest-wall, large enough to admit fist. Patient died of internal hemorrhage.

DR. KELLY, of Baltimore, urged the propriety of considering American claims in the matter of priority of originality in technic. He said: I use the non-absorbable sutures. When it comes to transplantation of the cord in hernia, getting rid of the weak point in the wall, I want all these gentlemen here to speak not of the Bassini operation, but of the Halsted operation. If you will take a little bit of trouble and consult the records, you will see that Dr. Halsted's publication antedated that of Bassini.

DR. LORD, of Omaha, reported a case of

UMBILICAL HERNIA

in a patient weighing three hundred pounds, who had had repeated pregnancies, the last of which resulted in twins. There were two large hernias, one the size of a Bartlett pear, and the other the size of an ordinary hen's egg, between the umbilicus and the ensiform cartilage. I do not recall ever seeing in my researches reference to an umbilical hernia of this kind.

DR. BALLARD, of Louisville, thought that the curved incision offered some points of advantage.

DR. WARNER, of Columbus, urged the early operation of hernia.

DR. MANLEY, of New York, thought the keynote to the situation was that the operation for the so-called cure of reducible hernia ought to be the simplest.

DR. MILLIKEN, of Texas, thought that the silver-wire suture solved the problem.

DR. MOORE, of Minneapolis, wished to bear testimony to the fact that multiple ventral hernias occurred above the umbilicus.

DR. OCHSNER discounted the idea of priority of claims to operations, and thought that the important point was a radical operation, and "not to fool away any time about this man and that man."

DR. RUTH, of Keokuk, said that despite all care he had taken with absorbable and non-absorbable material, he had a great deal of trouble occasionally with infection.

DR. MURPHY, of Chicago, reported a

METHOD OF CLOSING AN OPENING IN DIAPHRAGMATIC HERNIA IN THE CASE OF A BULLET WOUND.

DR. HARRIS, of Chicago, said that all methods which transplanted the chord were bad; he also pointed out the value of the silver-wire longitudinal suture and said that it was removable; that it secured the most perfect coaptation and afforded the best union.

DR. RAMON GUITERAS, of New York, presented a paper entitled

SOME OBSERVATIONS ON THE BOTTINI OPERATION FOR PROSTATIC HYPERTROPHY.

He reviewed the etiology, normal and pathological anatomy, macroscopic and microscopic conditions, symptomatology, prognosis and treatment. He believed in trying palliative measures first, that resection, castration, etc., had all had their day and their advocates. He then gave a description of the Bottini instrument and operative technic. Bottini operated on 200 cases, only 23 of which received any value; no deaths. Meyer, he said, had 12 cases, 4 of which were fatal; Friedenberg had 32; Stein, 12, all improved; Simon, 8, 2 fatal; Hank, 5, fair result; Morton, the same; Clark, 4 cases, fair result; Guiteras, 20 cases, 2 deaths.

In discussion, DR. FREEMAN, of Chicago, reported 7 cases with no deaths; 6 had large, rather firm, prostates, about the size of a lemon. In the seventh case, he said, the prostate could not be felt through the rectum, the middle lobe being large and valvular. All had been very much benefited by the operation.

DR. ROBBINS, of Michigan, reported 4 cases, and said that while he thought it was one of the valuable operations of the future, at the same time he believed that it was a dangerous operation, unless the operator was extremely careful.

DR. BOUFFLEUR, of Chicago, said that he saw a man's entire urethra split by the Bottini operation, and this in the hands of a celebrated surgeon, the blade having turned to the side. He further said: "If the cauterization of the prostate is so valuable, why do it in the dark? Why not make a suprapubic incision, take the cautery and burn the prostate through the bladder?"

In closing the discussion, DR. GUITERAS said that the bending of the blade was a very important point, and that it usually occurs when the amount of electric force is off during an operation. Before every Bottini operation, the battery should be recharged. As a general thing, there is enough force in the battery for three operations; sometimes only one.

DR. W. M. BEACH, of Pittsburg, read a paper on

SOME COMPLICATIONS RESULTING FROM RECTAL OPERATIONS.

He named as some of the complications following operations or injuries upon the fixed rectum, first, incontinence; second, stricture; third, elongation of the anal rectum; fourth, ulceration and hemorrhage; fifth, loss of rectal sense-organs; sixth, suppuration and phlebitis. The direct antithesis of incontinence is stricture.

In discussion, DR. PENNINGTON, of Chicago, thought that, while a good many bad results follow operations on the rectum because of the operation itself, that is, operation for hemorrhoids, etc., I think a great many of these evil results, such as stricture, ulceration, hemorrhage, etc., are due to inefficient after-treatment as much as to the operation itself.

DR. MARTIN, of Cleveland, thought that the title of the paper ought to have been, "Bad results of bad surgery."

DR. A. H. FERGUSON, of Chicago, read a paper on

A TYPICAL OPERATION FOR THE RADICAL CURE OF OBLIQUE INGUINAL HERNIA AND ATYPICAL ONES.

He said, in part: A typical operation for the radical cure of oblique inguinal hernia is one that places all the structures involved in the same relationship to one another as they are present in a normal person. The operations that have been hitherto produced to cure inguinal hernia fall far short of being typical. A careful analysis of failures, a painstaking research for hidden truths and a discernment for contestable premises are ever before the surgeon who hopes for more success, new discoveries and lasting operative procedures. Of all the operations that I have performed, it is the simplest and easiest to execute. There is good scientific reason furnished for every step in the operation. The results are excellent so far. The

last eighteen months I have performed my typical operation sixty-four times, counting each case of double hernia as two operations. There have been no relapses so far. Atypical operations for the radical cure of inguinal hernia are all those which do not in the completed operation leave all the structures as they are present in a normal inguinal region.

The following papers were read by title:

"Excision of Rectum for Malignant Disease, without Sacral Resection," by DR. NICHOLAS SENN, of Chicago.

"Colostomy," by DR. J. A. WYETH, of New York.

"Contribution to the Subject of Operative Interference in Perforating Typoid Ulcer," by DR. C. A. POWERS, of Denver.

"Influence of Age, Sex and Race in Surgical diseases," by DR. W. L. RODMAN, of Philadelphia.

"Hernia of the Diaphragm and Report of Cases," by DR. FLOYD M. MCRAE, of Atlanta, Ga.

FOURTH DAY.

DR. S. L. MCCURDY, of Pittsburg, read a paper entitled

DETAIL IN CLEFT-PALATE OPERATIONS.

He said that in all operations upon the mouth or face the patient should be placed in the Murphy position, the operator sitting above the head, and that Fillebrown's method of producing anesthesia is of advantage in all operations on the face and mouth. He held that in every operation upon congenital deformities the preservation of material should be the first consideration, and that in Fillebrown's operation this conservation of tissue was observed. He then described an instrument called a "steel hoe," with a cutting edge on the tip and on both sides, which was devised for the purpose of cutting through the soft tissues well up around the margin of the cleft, and far enough, too, so that when the flaps are hoed from the bone they reach across the chasm. With the cutting sides it is drawn forward to the anterior angle and backward along the margin of the soft palate, as well as the hard, the uvula being readily split to its tip. A self-retaining mouth-gag was likewise described, which can be accurately adjusted to the side of the head without tilting the mouth-gag from the teeth; it is held in position by a head-band. A self-retaining tongue-depressor is attached to the gag; the tongue can be thrown up to any desired position by adjusting a lever which is attached to the gag apparatus. He then showed an improved staphylorrhaphy needle.

DR. VANCE, of Louisville, said that he endorsed the use of this needle, and that he first knew of it as having been used by Dr. Koons, of Kentucky, since 1882. He believed that it was the best staphylorrhaphy needle in use. He said it was a question whether the dentist could not perform these operations better when the cleft ran back to the hard palate.

DR. OCHSNER said that he had performed the Wolf operation on over thirty patients with success, and that the secret of success in these hard-palate operations consisted in making the flaps so loose that it required no tension to hold them in place.

DR. BULLITT, of Louisville, DR. RICKETTS, of Cincinnati, and DR. MCCURDY closed the discussion.

THE TREATMENT OF BURNS.

DR. M. F. LEE, of Columbus, read this paper by title.

DR. LISTON H. MONTGOMERY, of Chicago, followed with a consideration of

TRAUMATIC SHOCK.

He said that the causes and results of traumatic or surgical shock depend upon the amount of constitutional disturbance that has been produced by the solution of continuity. Among the immediate and remote causes that produce shock would be, for instance, the falling of a heavy weight. A blow upon the head or over the spine, be this ever so slight, and whether the injury inflicted is a contusion, or when a wound has been produced, has been immediately followed by concussion or shock, as the surgeon is disposed to diagnose it. One of the very first symptoms of shock is the subnormal condition of the bodily temperature of the patient. In a word, anticipate shock by the administration of morphine, chloral hydrate, or, if the indications require it, give brandy, whiskey, aromatic spirits of ammonia, coffee, or tincture of digitalis, or the hypodermic use of strychnia, if need be; inhalation of amyl nitrite, and if there is hemorrhage and it is under control, have at hand a saline solution of tepid sterilized water. Keep the head lowered and the body in a recumbent position.

DR. WARNER thought that the loss of blood in this matter of shock was an important point. Especially was this true in children.

DR. FAIRCHILD, of Iowa, thought that the question of shock was a very misleading one. He had seen cases of profound injury in which the element of shock was not very great at the time, and again he had seen patients that were not injured severely suffering from most profound shock.

DR. JELKS, of Memphis, found that the extreme pallor might be relieved and shock ameliorated by a lowering of the head.

DR. NELSON, of Chicago, was of the opinion that anything that affected the sympathetic system would produce shock.

DR. BISHOP, of Pennsylvania, held the idea that one of the things to do was to "cure the doctor of shock," that the best way to get reaction was to "quiet the doctor." He thought that there should be differentiation between shock and hysteria.

DR. JONAS, of Omaha, said it was necessary to clearly define shock from injury; that shock was due to overstimulation; that there was the same amount of blood in the system after the shock, and that the introduction of the saline solutions overfilled the vascular system, producing an amount of work that the heart was incapable of performing, and that many patients were thus killed, instead of shocked to death.

DR. EARLE, of Maryland, DR. MEANS, of Columbus, and DR. WARNER closed the discussion.

WOULD SURGERY SUFFER IF IODOFORM WERE ABOLISHED?

DR. E. C. BRUSH, of Zanesville, O., read this paper by title.

DR. WILLIAM JEPSON, of Sioux City, Ia., read a paper on

AUTOMATIC DRAINAGE.

It was discussed by DR. BULLITT, of Louisville, DR. WARREN, of Columbus, DR. FAIRCHILD, of Iowa, DR. DUGAN and DR. EGGLESTON.

DR. THOMAS C. MARTIN, of Cleveland, read a paper entitled

PHANTOM, SEMILUNAR AND ANNULAR STRICTURES OF THE RECTUM; THEIR DIAGNOSIS AND RADICAL TREATMENT UNDER DIRECT INSPECTION.

He said, in part: That the rectal valve constitutes the most hypsometric of the topographic features of the movable abdominal rectum is conclusively proven by the photographic pictures. The specimens from which the photographs were taken were prepared by a method consisting in fixing the cadaver in the knee-chest posture, and pouring melted paraffine into the atmospherically inflated rectum; when the wax had sufficiently hardened, the gut was carefully removed. There are three forms of valvular obstruction: (1) Anatomic coaptation of the valves may establish an abnormal physiologic resistance to the descent of the feces; (2) congenital hyperplasia of the rectal valve is a condition classically described as diaphragmatic stricture or membraneous septum in the abdominal rectum; (3) hypertrophy of the rectal valve constitutes the classic annular stricture of the abdominal rectum. Obstipation was an important symptom. He differentiated between constipation and obstipation.

DR. EARLE, of Maryland, said that if any person doubted the existence of the valves, the same could be verified by placing the patient in knee-chest position and using a Sims speculum.

DR. BURNHAM, of Baltimore, thought that while these valves did exist, their presence was not quite as distinct as the essayist would want to have them.

The paper was further discussed by DRS. BEECH, PENNINGTON, JELKS and MARTIN.

DR. THOMAS YOUMANS, of Columbus, read a paper on

ACUTE GONORRHEA; ITS PREVENTION AND CURE.

DR. THOMAS'S (Pittsburg) method of treating gonorrhea was twice a day at first, then once a day, etc. A temperature of 140° will not kill the gonococcus. It has been said a case in which typhoid existed and at the same time gonorrhea existed, the typhoid fever would kill the gonococcus. I have a patient under my care at the present time who had typhoid fever, but it did not kill the gonococcus.

DR. CAMPBELL, of Chicago, pointedly remarked in discussion: With regard to the prevention of gonorrhea, I would say that the parents should consider it more their duty in the case of marriage to investigate the condition of the prospective groom, and in that way lessen very materially the work of the gynecologist.

DR. PATTERSON, of Philadelphia, said that the one known method of prevention of gonorrhea is "virtue"; that 85 per cent. of the prostitutes of Philadelphia suffered with some form of venereal disease, the greater proportion having gonorrhea. He also stated that in the University of Pennsylvania, department of genito-urinary diseases, they were able to state absolutely when a case was cured and when it was safe for a man and woman to marry.

DR. FERD. C. VALENTINE, of New York, was the next discusser. He said, in part: The doctor began by saying that the majority of males become gonorrheic. He does not go so far as Spencer Wells, who says that every man had a "clap" sometime or other in his life. I believe that only 90 per cent. of men have it and I protest on behalf of man against the slander! From 10 to 30 per cent. of females become gonorrheic after marriage. I believe that to be an underestimate, because in the statistics of 1894 (Berlin), it was shown that of women dead of disease of the reproductive apparatus, 80 per cent. died of gonorrheal infection. How many of these succumbed because of gonorrhea conveyed by husbands who considered themselves cured it is impossible to say, because the majority of men, I think, would not marry until they felt that the woman of their choice would not become diseased through them. Eighty per cent. of the children that went blind in Germany lost their sight from gonorrheal ophthalmia. He pointed out many diseases resultant from gonorrheal infection. He used the 25 per cent. of the stock solution of potassium iodide and kept fresh bottles on hand.

DR. OCHSNER and DR. JELKS closed the discussion.

Papers by DR. B. B. DAVIS, of Omaha, "A Case of Brain Cyst," and DR. J. H. LETCHER, Henderson, Ky., "Mammary Cancer," were read by title.

DR. F. C. VALENTINE, of New York, read a paper entitled

OUTLINES OF URETHROSCOPIC DIAGNOSIS, WITH SPECIAL REFERENCE TO CHRONIC GONORRHEA.

The doctor held that the chief essential in the treatment of chronic gonorrhea is manifestly, as in other diseases, to ascertain its cause. An instrument, he said, was necessary to show the practitioner where the disease lies, and its character; that such an instrument must be simple in construction, easy of use, not prone to get out of order, and always reliable. He believed that the study of urethroscopy on the cadaver was absolutely useless, circulation having ceased, the natural color and consistency of the mucosa gone, offering no means for comparison. He said that the most frequent tumors of the urethra were papillomas and fibrous polypuses; that carcinoma of the urethra was very rare; that Oberländer was first to make an early diagnosis of carcinoma by means of the urethroscope in 1893. His closing thoughts were, that no chronic disease of the urethra can be diagnosed nor intelligently treated without the urethroscope; the technic of urethroscopy is not difficult; that a urethroscope must be easily manageable, of a prime cost, and of a price of maintenance within the means of the average general practitioner. All these requirements, I think, are attained in the little instrument I am demonstrating.

DR. TUCKERMAN, of Cleveland, said that he would like to show an extension of urethroscopy, presenting a photograph and his device. He had for the purpose of vesical examination made a slight modification in the shape of the obturator, making the point at the side instead of in the middle, and by that means, with a little care, the point enters with ease through the triangular ligament into the membranous urethra, and slides easily over the prostate.

The following papers were read by title:

"Use of Distilled Water and Boiling for the Sterilization of Surgical Instruments," by DR. W. K. ROGERS, of Columbus.

"Use of Dental Engine in Surgery," by DR. W. G. A. BONWILL, of Philadelphia.

"The Division Field Hospital," by DR. S. K. CRAWFORD, of Chicago.

"Intestinal Anastomosis without Foreign Body by Means of a Natural Bobbin," by DR. F. B. TURCK, of Chicago.

DR. J. B. EAGLESON, of Seattle, read a paper on

CASE OF PANCREATIC CYST; OPERATION; RECOVERY.

The patient in question was a native of Norway, age 34. In May, 1897, she had a sudden attack of severe pain in the left side in the region of the kidney, accompanied by extreme nausea and vomiting. The attack lasted five weeks. A second attack occurred in July. During the following winter she suffered recurrent attacks. At the operation the usual lumbar incision was made for exploring the kidney, which was found healthy; the tumor could be located as extending from a fixed point just above the kidney downwards and forwards into the abdominal cavity. The tumor when extricated was found to be oval in shape and about twelve E. M. in diameter; it was smooth, dense and hard, resembling a solid tumor on palpation. An opening was torn through the gastrocolic omentum and the tumor wall exposed, which had a dark bluish color resembling a cyst. It was now diagnosed as a pancreatic cyst and I decided upon immediate incision and drainage. An incision one inch long was now made into the cyst and its contents drained out by turning the patient on her left side. The contents were fluid, dark greenish-yellow, quite turbid, with a sourish odor. At the end of six months her health is good and she is able to do her own housework.

DR. R. M. STONE, of Omaha, Nebraska, read a paper entitled

REPORT ON THE SCHLEICH SOLUTION.

He said, in part: Schleich suggested various formulas containing chloroform, ether, and benzin in different proportions. His No. 3 formula was composed of: Chloroform, 30 cubic centimetres; ether, 80 centimetres; benzin, 15 centimetres. This was adapted to major operations and had a boiling-point of 107.4°. Through the courtesy of Dr. C. C. Allison, surgeon-in-chief of the Presbyterian Hospital in Omaha, I have had the chance to give the Schleich solution 200 times. I have now used it in 250 cases all told. The longer I use it the better I am satisfied with its superiority.

In discussion, DR. MURPHY said that he had had Dr. Stone use the Schleich solution in Chicago for him with very excellent results, and that he was well pleased with it.

DR. JEPSON thought that from statistics of deaths from ether and chloroform, and the number of cases that have been given the Schleich solution in this country, he did not think there were yet sufficient data to prove which was the safest anesthetic.

The above being the concluding paper in the Section of Surgery and Anatomy, DR. MURPHY, of Chicago, proposed resolutions of thanks to the Chairman, Dr. Mayo, for the scientific and business-like manner in which he handled the sessions. The proposition of Dr. Murphy was concurred in by the members of the Section rising simultaneously.

DR. MAYO said: "I thank you for this appreciation of my efforts," and then modestly referred to the Secretary, Dr. Harris, who, he said, assisted him greatly in rendering the results obtained.

A motion to adjourn was then made and ordered.

A $250,000 FEE. — Even the surgeons will soon have to envy the bacteriologist. Koch is said to have asked of the Cape Colony Government the modest fee of $250,000 for his work on the Rinderpest. — *Philadelphia Medical Journal.*

Recent Literature.

The Surgery of the Head and Neck. By LEVI COOPER LANE, A.M., M.D. (Berl.), M.R.C.S. (Eng.) LL.D., Professor of Surgery in Cooper Medical College, San Francisco. Second edition. Philadelphia: P. Blakiston, Son & Co. 1898.

Professor Lane, in his book on "Surgery of the Head and Neck," dedicates his book to futurity, and has only the limited hope that a few years of existence will be granted to its pages. We, however, think better of the work than the author. It is written essentially from a personal standpoint and takes up with commendable thoroughness the various affections of the head and neck. It is written in a pleasing style, and is evidently the result of the author's ripe experience, and works that are founded upon experience are not entirely ephemeral. The cuts in the book are curiously antiquated, and, we regret, do not add to the value of the book. We shall look with interest for the appearance of a work from the author on other portions of the body. The book is very readable.

Chemistry: General, Medical and Pharmaceutical, including The Chemistry of the U. S. Pharmacopœia. By JOHN ATTFIELD, F.R.S., for thirty-four years Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. Sixteenth edition. Philadelphia and New York: Lea Brothers & Co. 1899.

So rapid and extensive is the advance in the science and art of chemistry that this sixteenth edition of Professor Attfield's work, in spite of the fact that two former editions have appeared within the last decade, contains upon almost every page some important additions to the text.

These changes bring up to date the book which of all books upon the subject of chemistry is probably the best adapted for the teaching of the science of chemistry in its applications in medicine and pharmacy. Combined with a thoroughly comprehensive treatment of the subject and a store of general and special information upon chemistry, the book has a teaching quality which is most remarkable.

The system, and the various methods enlisted by Professor Attfield to teach this, from the point of view of the teacher, most difficult subject, may well serve as an example to all writers upon scientific subjects.

The Treatment of Disease by Physical Methods. By THOMAS STRETCH DOWSE, M. D. (Abd.), F.R.C.P. (Edin.), formerly Physician Superintendent Central London Sick Asylum; President North London Medical Society; Physician to the North London Hospital for Consumption and Diseases of the Chest; to the Northwest London Hospital and to the West End Hospital for Epilepsy and Diseases of the Nervous System, etc. Pp. 400. New York: E. B. Treat & Co. 1899.

This work is in reality a later edition under a new title of the writer's lectures on massage and electricity in the treatment of disease. The general style of the book remains the same, but the subject matter has been brought up to date. In addition to chapters on the principles of massage and its method of application are discussions on the special massage of different portions

of the body. Particular attention is given to massage in nervous exhaustion, sleeplessness, pain, melancholia and allied states. One lecture is devoted to the Weir-Mitchell treatment and another to the Manheim treatment in diseases of the heart. A chapter on Electrophysics and another on Electro-therapeutics complete the volume. The book contains much matter foreign to its title. This is notably the case in the chapter on Massage in Nervous Exhaustion, Neurasthenia and Hysteria. This is a decided disadvantage, in our opinion, from the standpoint of the general practitioner. He opens the book to learn the author's ideas on massage in these various diseases and nothing more. Few doctors have time to read books of 400 pages, of whatever character, and especially is this the case in so narrow a field of medicine as massage and electricity. It is only justice to add that for students of massage these digressions into general medicine will prove very profitable, because of the attractive manner in which they are presented. The broad training of the writer, as his various hospital appointments testify, is made evident from the beginning to the end of the volume.

The Newer Remedies. A Reference Manual for Physicians, Pharmacists and Students. Third edition. By VIRGIL COBLENTZ, A.M., Phar. M., Ph.D., F. C.S., etc., Professor of Chemistry and Physics in the New York College of Pharmacy. Pp. 150, octavo. Philadelphia: P. Blakiston, Son & Co. 1899.

This manual contains an alphabetical arrangement of the newer remedies, giving in concise form their synonyms, sources, methods of preparation, tests, solubilities, incompatibles, medicinal properties and doses. In the addenda, special consideration is devoted to organo-therapeutic agents and the indifferent compounds of iron. The book is exactly what it pretends to be, is eminently satisfactory and its third edition is sure to meet with favor by physicians and druggists.

The Crystalline Lens System. Its Embryology, Anatomy, Physiological Chemistry, Physiology, Pathology, Diseases, Treatment, Operations and After-Changes, with a Consideration of Aphakia. By LOUIS STRICKER, M.D., Cincinnati, O. Pp. 600. 1899.

Dr. Stricker intended originally merely to make a translation of Otto Becker's classical monograph, "Pathologie und Therapie des Linsen Systems," which appeared as a part of the Graefe-Saemisch Handbuch in 1877 and his "Zur Anatomie des gesunden und kranken Linse," which he published in 1884. Although the improved laboratory methods which have come into more general use during the last decade have greatly increased our knowledge in other directions, it is unfortunate that in this particular department of ophthalmology a similar gratifying advance has not been noticed; much, however, has been done and consequently the compiler has seen fit to so enlarge the scope of his work as to include as far as possible what new facts have become known and what new theories have been promulgated in the various countries. The title that has been selected, comprehensive as it is, but inadequately describes the immense amount of subject matter contained within the covers and is likewise inadequate to a just conception of the amount of labor necessarily expended in the preparation of a compilation so extensive, the sources of information being often so remote. Numerous footnotes and a bibliography in chronological order from 1532 to 1895, comprising 3,433 references, help to make the book of inestimable value for purposes of reference. It is a matter of exceeding regret that such excellent results attained at the expenditure of so much time and energy should be so marred by careless proofreading; the errors in spelling, numerous as they are, may easily be eliminated from a future edition, which it is to be hoped will be printed upon better paper and be submitted as a more satisfying example of the art of book-binding.

Clinical Lectures on Mental Diseases. By F. S. CLOUSTON, M.D. (Edin.), F.R.C.P.E., etc. Fifth edition, pp. 727. Philadelphia and New York: Lea Brothers & Co. 1898.

This rarity — an entertaining scientific work — has reached its fifth edition in less than fifteen years, an unusual if not unprecendented achievement for a book on mental disease. Its well-deserved success is in large measure due to the author's vivid and faithful delineation of the disorder in all its varieties. His descriptions and cases make a masterly collection of clinical pictures, unequalled in modern psychiatric literature. His now well-known studies of the influence of development upon the sane and insane mind, which have materially advanced our knowledge of the pathology of insanity, still further enhance the value of this volume.

The present edition is mostly a reprint of the last, the only additions relating to the use of thyroid extract in certain cases of insanity, and to some original pathological work done at the Edinburgh Royal Asylum and the Scotland Asylum's pathological laboratory.

Luke; the Beloved Physician. By J. C. CULBERTSON, M.D., Cincinnati, O. 1899.

It is worth while for the physician occasionally to turn aside from the ultra-professional literature which forms the bulk of physicians' libraries, and to contemplate the lives of those men of early times of whom brief fragmentary sketches constitute our best information.

The beloved physician, whose life forms the subject of this excellent character sketch by Dr. Culbertson, is best known to us by his writings. Of his active skill as a physician or surgeon we have little or no information. As a keen observer and reporter of the exciting events which he witnessed in the first century of the Christian era he had no equal. His deep professional interest is shown by the minuteness and care with which he portrayed the infirmities and the diseases to which the people of those times were subject.

REGULATION OF MASSAGE IN HUNGARY. — The Hungarian Minister of the Interior has issued stringent regulations for the control of massage establishments, etc. Massage treatment in diseases of the sexual and abdominal organs and of the eye may be carried out only by qualified medical men. In all other cases the operator must have the advice and supervision of a qualified medical man. Transgressions of these rules is a misdemeanor punishable, if free from aggravating circumstances, by imprisonment up to fifteen days and a fine not exceeding 100 gulden. — *Medical Magazine.*

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TETANUS AND FOURTH OF JULY.

THE fact that six deaths have occurred in Boston and twenty-four in New York and vicinity from tetanus, the injury in almost every case being due to toy-pistol wounds received on the Fourth of July, calls attention anew to the barbarous character of the American method of displaying patriotism on that day.

Fireworks have to be exploded in the middle of the dusty road, or in a vacant lot with a dirt surface, in order to avoid littering lawns or setting fire to houses, and the result is that the irresponsible small boy is turned loose with his fellows to spend the day in a grand carnival of dirt, gunpowder, racket and patriotism. By the time he has gotten his hands into a condition of grime superlative even for the small boy, he bethinks himself of the toy pistol which his father has provided him with to cap the climax of the celebration, and in his haste and excitement, handling it with his finger on the trigger and his left palm over the nozzle, fires the blank charge of wadding into the bacillus-laden dirt which smears his palm, and carries it through the skin and palmar fascia in among the tendons and nerves. A bullet would be a safer charge for the cartridge, for it would go clear through. The boy then runs to his mother, who finds that the wound looks trivial (the little puncture in the tense palmar fascia gives no idea of the amount of dirt, wadding and havoc inside), washes the hand, ties a rag around it, and the boy goes on with his play.

The mother may, as, alas, has not infrequently happened, take the child to a doctor, who not remembering the anaërobic nature of the bacillus, and the fibrous strength of the palmar fascia, so well adapted to cover and hide the dirt and wadding, makes a superficial examination, perhaps probes the wound, puts in an antiseptic dressing and sends the child home. The wound apparently does well, there is no swelling or redness, or at most a slight seropurulent discharge.

In four or five days the symptoms of lockjaw set in, the boy is hurried to a hospital, where all too late a quart or so of antitoxin is injected into his vein or his brain, the wound is thoroughly opened up, the wadding and *débris* removed, but the poison has already locked the nervous system in its iron grip, the poor boy's back stiffens and arches, he cries with pain as the convulsions become more frequent, and dies within a few hours of his admission to the hospital.

Now the pity of it is that this whole sad story need never have taken place were it not for the manifestations of carelessness and ignorance at several points. In the first place, even if the Fourth of July must be celebrated, let the parents, however willing to trust their precious offspring to the tender mercies of the dynamite cracker and the toy cannon, remember that the toy pistol with the so-called blank cartridge is more dangerous to their boy himself, at least, if not to the bystanders, than a 32 Colt revolver loaded with ball cartridge, and let them refrain from including it among the dangers to which their liberality and patriotism subject him.

In the second place, let parents and physicians remember that punctured wounds through the palmar fascia must be widely opened and kept open, and cleaned and kept clean. Common atmospheric air will poison what few bacilli the doctor cannot wash away. In other words, tetanus is an eminently preventable disease, and it is some one's fault, either from carelessness or ignorance, when a boy dies of it.

When loose talk is indulged in about an epidemic of tetanus as a result of the number of cases that have occurred since the Fourth of July, it is well to remember that the tetanus bacillus is ommipresent in street and stable dirt and garden mould, and whenever the bacillus is presented, by means of Fourth of July and the toy pistol, with the most favorable conditions for growth and multiplication, he is a fool if he doesn't grow and multiply. If every day were Fourth of July we might expect an epidemic of tetanus, but as that is fortunately not the case there is no reason to fear it.

In regard to the results of the serum treatment, the experience of the last few weeks in Boston has agreed with that of previous years in showing that in the acute cases, namely, those in which the symptoms appeared within ten days of the infection, treatment by antitoxin or any other method was useless. In Boston all the cases occurred within six days and all died. The two cases treated at the Boston City Hospital received large doses, 400 to 500 cubic centimetres by intravenous injection, in spite of which the progress of the disease to a fatal termination was rapid.

As noted in another column, the mortality of the New York cases has been very large. In most of these it is stated that the intracerebral injections were employed.

With regard to the efficacy of the antitoxin treatment, when we consider that recently it was employed in very large amounts and without modifying the mor-

tality of the acute cases, it looks as if we must await some more effective preparation, stronger in antitoxic units, before much can be expected from it.

The fact that the milder cases got well under antitoxin treatment does not prove anything, as these cases got well before antitoxin was employed.

THE TREATMENT OF INEBRIETY.

THOSE who are most actively engaged in work among the poor are agreed that alcohol lies at the basis of most of the degradation and misery which is so apparent in any large city, and is also a menace in our smaller towns. Various efforts have been made to remedy or at least modify the evil by legislative acts, with but doubtful success. Prohibition has failed of its end in great degree, and the restriction of licenses has but slight effect where so many are granted. Moral suasion, valuable as it may be in individual cases, will hardly reach the root of the matter, while human nature remains as it is. It would appear, therefore, that we must, in a measure, accept the situation, and while not relinquishing all legitimate means of combating the evil, should rather direct our attention, as physicians, to the vice of alcoholism as a disease, and provide suitable treatment for its victims. The recognition of this fact has led from time to time to the establishment of asylums for inebriates, in which they may have the restraint, combined with the moral and physical care, which are prerequisites to their cure.

The first institution of this sort in America was opened for patients at Binghamton, N. Y., in 1864; after various vicissitudes, dependent largely upon meddling politics, the institution was converted into an asylum for the insane. In spite of the unfortunate outcome of this earliest attempt at systematic medical treatment of the inebriate, over fifty similar hospitals have since been established in America, of which at least thirty are said to be in active operation at the present time. Our own State Institution at Foxboro is an example of what may be done in the treatment of this diseased and dangerous class in the community.

Wherever civilized man has gone alcohol has apparently been his constant companion, to the detriment of the morals of those savage tribes with whom he has been brought into contact, as well as of himself. We have been much interested in receiving a copy of a bill drawn up by Dr. J. M. Creed, of Sydney, New South Wales, providing for the care, control and treatment of inebriates in that community. The bill has already passed the Legislative Council, and is now ready for presentation to the Legislative Assembly for its concurrence. The document is drawn up in a most comprehensive way, and covers a great variety of details. Its object, in general, is to provide judicial authority over the inebriate class, to the end that they may be properly guarded and cared for during the periods of their irresponsibility. Certain of the more important suggestions of the bill are as follow: A judge or magistrate, on application, and after evidence of a medical practitioner, and on inspection, may make an order as to the control of inebriates. Lower courts may make an order in case of an inebriate frequently convicted of drunkenness. The property of an inebriate may be under the order of a judge or magistrate or court in lunacy. Inebriates are not to leave the Colony of New South Wales. Places where inebriates are under control may be inspected by certain officers, including the inspector-general of the insane. A person supplying an inebriate with intoxicants shall be liable to penalty. The governor may license institutions and may make regulations.

In general, the provisions of the bill are admirable, and may well be studied in detail by those interested in such legislation. While there are, doubtless, certain minor points dependent upon the form of government in New South Wales, which would not apply to our States, nevertheless, the underlying principle must be the same everywhere where inebriety exists. Victims of the alcohol habit, for the protection of themselves, their families, and the community at large, must in an enlightened state of society be treated not as criminals, nor as insane, but as sick, and therefore imperatively needing care, for a longer or shorter period.

Appended to the bill before us is an interview with Dr. Creed, which contains much common sense, clearly stated. Among other things he says:

> I have not slavishly followed previous legislation, as it has not been effective. In most cases elsewhere no action can be taken except on the initiative of the dipsomaniac himself, and but few have the self-reliance or sense of duty to do what is necessary for themselves. To be of real advantage any law must contain provision for action to be taken by some other person, if it is proved necessary, without the previous assent of the victim of intemperance. This is done in ordinary cases of lunacy; why should it not be in the madness of drink? It is hypercritical to object to similar action being taken in both cases. Habitual drunkards no doubt might be certified to as lunatics, but we are reluctant to place this stigma on any one who, if kept from drink, will be sane in a week. I have also taken a new departure by providing that a person may be placed under the charge of an attendant without being confined in an institution. In this way many sad cases might be controlled, in which the sufferers would have to be left to perish without it. . . . The best intellects of our time, which have made the consideration of this most important of all social problems a special study, are unanimous in their opinion that it is simply criminal ignorance to continue to treat drunkeness as a crime, when there are known scientific methods of dealing with it successfully — of curing it absolutely in many cases, as I have been, and am doing, even without the aid which this bill would give, and of preventing continuous outbreaks of the use of healthy substitutes for alcohol at the right time.

It is, no doubt, by such legislation, practiced in a large scale, that substantial reforms are to be accomplished.

MEDICAL NOTES.

IMPRUDENT HOMICIDE. — Dr. Lassellette has just been sentenced, in Paris, to two months' imprisonment for "imprudent homicide." The doctor had operated upon Madame T. for a voluminous fibroma of the uterus; a few hours after the operation the patient died. The autopsy revealed a pair of hemostatic forceps in the cavity of the uterus. — *Philadelphia Medical Journal.*

DR. SCHAEFER CALLED TO EDINBURGH. — Prof. E. A. Schaefer, F.R.S., for fifteen years Jodrell professor of physiology in University College, London, has been elected to the chair of physiology in the University of Edinburgh.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 19, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 37, scarlet fever 24, measles 35, typhoid fever 15.

TETANUS AT THE BOSTON CITY HOSPITAL. — Two cases of tetanus as a result of toy-pistol wounds received on the Fourth of July were treated by the intravenous injections of large amounts, 400 to 500 c. c., of the antitoxic serum of the State Board of Health. Both cases were acute, the incubation periods being five and six days, and both were fatal within twelve hours of admission to the hospital.

BUTLER HOSPITAL FOR THE INSANE. — Dr. G. Alden Blumer, superintendent of the State Hospital for the Insane at Utica, N. Y., has accepted the offer of the superintendency of the Butler Hospital for the Insane, situated near Providence, R. I., to succeed the late Dr. Gorton.

NEW YORK.

INCOMPETENT TREATMENT OF THE SICK; AN ATTEMPT TO PREVENT IT. — A public meeting was held at the Waldorf-Astoria Hotel on July 13th, under the auspices of the Medical and Legal Relief Society, with the praiseworthy object of discussing the proper measures to be taken to put a stop to incompetent treatment of the sick by Christian Scientists and others. Unfortunately, however, the affair turned out to be somewhat of a farce, as there were few prominent medical men or other citizens present, and the Christian Scientists, who were on hand in large numbers, insisted on doing most of the talking. By way of formulation of remedial measures the provisions of a proposed bill by Alderman Opie were read, and these proved to be so impracticable as to be ludicrous. The bill might well be styled a law against giving bad advice, and is of such a nature that it could never be passed, or could never possibly be enforced if it were passed.

STERILIZED MILK FOR BROOKLYN. — Mr. Nathan Strauss, July 10th, began to supply the Borough of Brooklyn daily with one thousand bottles of pasteurized milk, free of charge, from one of his sterilizing plants in Manhattan, the distribution of the milk being made under the direction of the Health Department. A wealthy Brooklyn merchant has now offered to contribute $500 toward a fund to establish a milk-sterilizing plant in the Borough, and it is possible that a plant that was in operation there in 1895, and afterwards abandoned, may be reopened.

BELLEVUE'S NARROW ESCAPE. — By the prompt and energetic action of the resident physicians, nurses and attendants, several of whom were more or less seriously burned about the hands, Bellevue Hospital was saved from a destructive conflagration on the night of July 10th. The fire occurred in the infants' pavilion, where there were at the time about thirty women patients and forty babies, and was occasioned by the overturning of a candle, which set fire to the mosquito netting over one of the children's cribs. The flames spread rapidly from crib to crib, but, fortunately, all the inmates were rescued without any serious accident.

SCARLET FEVER AT WEST POINT. — A slight outbreak of scarlet fever of mild type recently occurred among the cadets at West Point, occasioning a considerable scare and preventing the landing of the senior class of cadets from the U. S. Naval Academy, who had come up the Hudson on the training ship *Annapolis* to pay them a social visit.

DEATH AT THE AGE OF ONE HUNDRED AND TWO. — Mrs. Harriet Byron Townsend, daughter of the late John Seaman, died at Roslyn, L. I., on July 8th, at the authenticated age of one hundred and two years. She was born at Locust Valley, not far from the place of her death, on November 25, 1796. Of her numerous descendants there are living two children, ten grandchildren, fifteen great-grandchildren, and three great-great-grandchildren.

THE LATE DR. FABRICIUS. — Dr. Frederick W. Fabricius, acting assistant surgeon, U. S. A., whose death from yellow fever at Santiago is mentioned in the JOURNAL of July 6th, was until recently a resident of New York, where Dr. H. M. Biggs was his preceptor and special friend. He was only twenty-six years of age, and was graduated from Bellevue Hospital in 1895. Later he was an interne of the Metropolitan Hospital for the Insane.

TETANUS IN NEW YORK. — During the three days July 12th, 13th and 14th no less than nine deaths from tetanus occurred in the city of New York, and ten deaths in places in the immediate vicinity, and it is said that between July 4th and July 16th there were in all twenty-four deaths from this disease in the city and vicinity. In almost every instance the tetanus was the result of a pistol-shot wound of the hand received on the Fourth of July, and nearly all the victims are young lads. The toy pistol is responsible for these deaths, the wad of the blank cartridge penetrating deep into the tissues of the hand, in most in-

stances a very dirty hand. One case of tetanus, however, is reported from Yonkers in which the disease is attributed to the scratching off of a vaccination scab, with the result of producing an ugly sore. This patient on July 15th was said to be improving under tetanus-antitoxin treatment. A considerable proportion of the large number of cases of tetanus which have recently occurred in New York and the neighboring towns have been treated with the serum, in most instances, it is stated, by means of intracerebral injections. The percentage of recoveries cannot be given at present, but a large proportion of the patients died, and it seems probable that in most of them the treatment was not resorted to until too late to afford much hope of a favorable result. Of three cases at the Roosevelt Hospital in which the serum treatment was used, one died and two were reported improved. One patient died at the Harlem Hospital and one at the J. Hood Wright Memorial Hospital. Four cases in Yonkers were reported improved, and of two cases in Passaic, N. J., one died and one was reported improved.

ARMY NOTES.

COST OF SUBSISTENCE FOR SICK SOLDIERS. — The orders issued during the Spanish-American War, allowing a *per diem* of sixty cents for the subsistence of each soldier undergoing hospital treatment have been revoked, and an allowance of forty cents per man from the appropriation for the subsistence of the army has been substituted, the latter sum having been found by experience to be amply sufficient.

THE "RELIEF" DETAINED AT YOKOHAMA. — The hospital ship *Relief*, on her way from Manila to San Francisco, with 250 sick and wounded, has been detained at Yokohama by the heavy storms which have prevailed.

POLICING OF VOLUNTEER CAMPS.— Recent orders relieve volunteer organizations in the home camps of the duty of policing their camp areas. The Quartermaster's Department is now charged with that duty, and is empowered to hire civilian scavengers and purchase the necessary appliances. These scavengers will have charge of the construction of latrines and the disposal of their contents, as well as the removal of all garbage and waste. The necessary disinfectants are to be furnished by the Medical Department. This order has been issued as a result of the recognition of the fact that raw troops are unwilling to properly perform the unpleasant tasks required for the maintenance of a fixed camp in sanitary condition, and manifest a strong tendency to evade the performance of such duties. The same order also amends tactics to the extent that latrines may be located by commanding officers as far from the vicinity of the kitchens as may be necessary, it formerly being prescribed that the company kitchens and latrines should be on the same side of the camp area, and hence in too close relation with each other.

Miscellany.

THE FEMALE NURSE CORPS OF THE ARMY.

A CIRCULAR providing for the organization of a corps of army nurses under the direction of the surgeon-general has recently been issued by the War Department. The corps will consist of chief nurses, nurses and reserve nurses, from which assignments will be made by the surgeon-general to such military hospitals as may contain cases requiring the attention of trained nurses. At each hospital to which nurses are assigned, one of them is to be a chief nurse, but under ordinary conditions not more than two will be assigned to hospitals having less than twenty beds. Women not under contract will not hereafter be permitted to serve as nurses in army hospitals except in an unforeseen emergency, the medical officer in charge of the hospital being required to at once report the fact to the surgeon-general for his action. For appointment, nurses must be qualified physically, mentally and morally; must be graduates of reputable training-schools and have had two years' experience in a hospital, and must also be endorsed by the superintendents of the schools in which they may have been trained or graduated. These provisions may, however, be waived in the case of dietists, immunes to yellow fever and nurses who rendered satisfactory service during the Spanish-American War. Contracts with nurses will be for periods of at least a year, except for immune nurses, who are not required to sign for any definite length of time. Nurses recently accepted are considered as on probation regarding their fitness for army service, and if not found acceptable are to be recommended for annulment of contract by the chief nurses under whom they may have served. Such recommendations, after being suitably endorsed by the medical officer in charge, are to be forwarded to the surgeon-general. The contract of a nurse will not be annulled except for good reason, presented in writing and forwarded the surgeon-general through the chief surgeon. The contracts of nurses serving outside the United States may be annulled by chief surgeons, provided the services of such nurses are no longer required; but nurses on duty in the United States, whose services have been satisfactory, will not be discharged except by order of the surgeon-general. For service in the United States the pay of nurses will be $40 per month; for colonial service $50 per month. Chief nurses receive the same pay as nurses where less than five nurses are constantly serving at a hospital. Where five or more and less than ten are constantly serving, a chief nurse receives $60 per month, while if more than ten nurses are serving together the chief nurse receives $75 per month. Nurses are furnished with transportation, medical attendance, furnished quarters and with one ration in kind. Leaves of absence on pay are not to exceed thirty days in any one year, but while on such leave the nurse receives twenty-five cents per diem in lieu of a ration. While on leave of absence the time consumed in travelling to and from the United States will not be counted. Each nurse must provide the prescribed uniform of blue and white at her own expense.

A certain number of nurses who have rendered at least four months' satisfactory service in the army are to be appointed reserve nurses. Each reserve nurse

is required to sign an agreement to enter active service, when and wherever necessary, and to report to the surgeon-general on the 1st of January and 1st of July of each year, and at other times if required. Reserve nurses are not paid except when on active duty and sign contracts for no definite period. A nurse will be dropped from the reserve list upon reaching the age of forty-five years if she ceases for five years to practise her profession, if she becomes incapacitated for duty by reason of ill-health, or for any other good and sufficient reason.

The nurses' corps is at present under the supervision of Dr. Anita Newcomb McGee, the only woman contract surgeon in the army.

THE SECRET OF SUCCESS IN MEDICINE.

WE learn from an American contemporary that Dr. John E. Harper, in an address on Success in Medicine, delivered at the graduating exercises of the College of Physicians and Surgeons of the University of Illinois, pointed his moral by citing the principles adopted by Sir Henry Holland for the conduct of his professional life. Holland began practice, Dr. Harper informed his hearers, "at the age of twenty-one among the aristocracy of the West End of London, and at the outset made the following two resolutions: (1) That he would never practise more than ten months in any one year, spending the remaining two months in travel and recreation; (2) that he would never allow his practice to exceed fifty thousand pounds per annum." To these rules, we gather, he adhered with admirable resolution for sixty-four years, and it is comforting to know that he "several times collected in one year the amount to which he had limited himself." We fancy that most people will fully agree with Dr. Harper that the secret of success in medicine is to make £50,000 a year. The resolution never to exceed that limit is one that most of us would find no difficulty in keeping; nor would many find such a self-denying ordinance as Sir Henry Holland with such fortitude inflicted on himself at all necessary. Sir Henry's plan of starting in practice "among the aristocracy of the West End of London" is another secret of success that is unfortunately not open to every one. Not a few have to content themselves with the aristocracy of Brixton, or Stepney, or even of Whitechapel, but these haunts of fashion have, of course, the advantage that the practitioner has, perhaps, less difficulty than he might find at the West End of limiting his income to £50,000 a year. To speak seriously, Sir Henry Holland's career is about the last which could be used as showing to ordinary practitioners the way to success in medicine. He had altogether exceptional advantages at the start; he lived at a time when a little knowledge went very much further than it goes now; he was largely used by statesmen as a neutral medium of unofficial communication, and by ladies as a purveyor of gossip — it is not on record that on his paying a professional visit one day he was informed that her ladyship was too ill to see him? Lastly, he did not limit his aspirations in the matter of fees to £50,000, but to £5,000 a year. Even this is a self-limitation which most practitioners do not find it needful to impose upon themselves as a rule of professional life. — *British Medical Journal.*

THE VEILED OPERATOR.

THE bacteriologists have discovered that the beard is without doubt guilty of harboring septic germs. Dr. Hübener, of Breslau, according to the *British Medical Journal*, has experimented on several of his bearded colleagues, passing a slide bearing a film of agar-agar two or three times over and through the beard. Out of 26 cases pyogenic cocci were thus obtained in 11; in 3 the staphylococcus pyogenes aureus in small groups; in 8 the staphylococcus pyogenes albus in great abundance. Experiments were tried by Professor Flügge — a man with a beard standing for ten minutes close over an agar plate without a cover, and then standing for the same time close to another agar plate with his beard covered with a mask of folded muslin. The difference in the number of germs thus obtained was extremely trifling. Nevertheless Hübener[1] believes that he has contrived a more perfect beard guard. A frame of the kind seen in the simpler chloroform masks is covered with sterilized muslin, and held to the face by a metal bar passing over the ears, as in a pair of spectacles. It covers the mouth and nostrils, and some of the muslin hangs below it and is tucked under the beard and fixed with pins to the collar of the operating jacket. Dr. Hübener finds his mask very effective. He repeated Flügge's experiments, and on this occasion the agar plate remained sterile in 6 out of 18 experiments with bearded surgeons. In the remaining 12 he assures us that only a few insignificant "colonies" were obtained. We fear that if this mask be adopted here, certain well-known opponents of antiseptics will laugh at the beards of their colleagues, an act which in the East is considered derogatory. Garré recommends that the operator should not wear a mask, but keep his beard moist in sublimate solution during an operation. This practice, however, is very uncomfortable, spoils the beard, and appears to act imperfectly as a guard against sepsis. Several foreign operators, it would appear, habitually wear beard masks. Theoretically, shaving would seem the safest course if Hübener's earlier experiments indicate a constant condition.

[1] Centralbl. f. Chir., No. 11, 1899.

METEOROLOGICAL RECORD

For the week ending July 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....2	30.03	74	86	61	52	65	58	S.W.	S.W.	10	15	C.	C.	
M...3	30.02	73	92	65	62	69	66	W.	S.W.	10	14	C.	C.	
T....4	30.04	81	94	68	57	68	62	S.W.	S.W.	12	14	C.	C.	
W...5	30.00	80	89	70	73	80	76	S.W.	S.	11	13	C.	C.	
T....6	29.86	81	90	72	79	64	72	S.W.	S.W.	9	13	O.	O.	.02
F....7	29.92	73	86	71	72	58	65	W.	W.	12	8	C.	C.	
S....8	29.89	72	77	68	77	91	84	E.	S.W.	8	6	O.	O.	.45
☞	29.97	73	88	68	67	71	69			10	12			.07

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 8, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung disease.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York	3,438,899	1607	845	26.76	8.40	21.00	.60	2.88
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	435	189	20.24	10.58	14.03	2.07	2.56
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	198	66	14.28	12.75	5.61	1.02	3.06
Baltimore	506,389	268	136	37.45	6.66	33.56	1.85	1.85
Cincinnati	405,000	121	—	12.45	1.66	8.26	—	1.66
Cleveland	250,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	153	78	28.60	5.85	25.35	.65	1.30
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	47	23	44.73	6.39	27.69	—	4.26
Nashville	87,754	47	21	31.95	19.17	21.30	4.26	—
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	—	—	—	—	—	—	—
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89,734	31	19	41.86	9.66	28.98	3.22	6.44
Lowell	88,641	48	33	47.84	2.08	40.60	—	4.16
Lynn	66,703	—	—	—	—	—	—	—
New Bedford	66,340	24	21	41.60	4.16	37.44	—	4.16
Somerville	61,101	11	5	9.09	—	9.09	—	—
Lawrence	57,263	37	24	43.20	13.50	32.40	—	8.10
Springfield	56,501	15	9	40.00	13.33	13.33	—	—
Holyoke	43,424	16	10	25.00	12.50	25.00	—	—
Brockton	37,278	9	2	11.11	—	—	—	11.11
Salem	36,883	21	9	4.76	4.76	4.76	—	—
Malden	34,613	8	—	—	12.50	—	—	—
Chelsea	33,468	15	3	6.66	20.00	—	—	6.66
Haverhill	32,022	6	1	—	—	—	—	—
Gloucester	30,569	4	1	—	25.00	—	—	—
Newton	29,716	13	5	6.79	—	—	—	—
Fitchburg	29,438	—	—	—	—	—	—	—
Taunton	28,167	15	6	13.33	—	13.33	—	—
Everett	25,338	7	4	—	—	—	—	—
Quincy	23,549	6	1	—	66.66	—	—	—
Pittsfield	22,643	—	—	—	—	—	—	—
Waltham	21,812	9	2	—	11.11	—	—	—
North Adams	20,971	3	—	—	—	—	—	—
Chicopee	17,842	12	7	50.00	—	50.00	—	—
Medford	16,511	3	—	—	—	—	—	—
Newburyport	14,915	—	—	—	—	—	—	—
Melrose	14,032	2	—	—	—	—	—	—

Deaths reported 3,194; under five years of age 1,523; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 841, diarrheal diseases 651, consumption 286, acute lung diseases 202, diphtheria and croup 90, typhoid fever 30, whooping-cough 24, measles 17, cerebro-spinal meningitis 13, scarlet fever 11, erysipelas 3, small-pox 2.

From whooping-cough New York 10, Philadelphia 4, Boston and Nashville 3 each. From cerebro-spinal meningitis New York 4, Boston and Cincinnati 3 each, Baltimore, Providence and Newton 1 each. From measles New York 13, Providence 2, Philadelphia and Washington 1 each. From scarlet fever New York 7, Boston 2, Philadelphia and Baltimore 1 each. From erysipelas New York 3. From small-pox New York and Boston 1 each.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 15, 1899.

L. B. BALDWIN, surgeon, detached from the Key West Naval Station and ordered to hospital, New York, for treatment.

R. G. BRODRICK, passed assistant surgeon, granted sick leave for six months.

R. K. MCCLANAHAN, assistant surgeon, detached from the Naval Hospital, Philadelphia, Pa., and ordered to the Key West Naval Station.

L. L. YOUNG, passed assistant surgeon, sick leave extended three months.

J. M. STEELE, surgeon, detached from duty in connection with recruiting rendezvous at Baltimore, Md., and ordered home to wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 13, 1899.

MCADAM, W. R., assistant surgeon. Granted leave of absence for fourteen days. July 11, 1899.

RAMUS, CARL, assistant surgeon. Relieved from duty at the Cape Charles Quarantine Station and directed to proceed to Havana, Cuba, and report to Surgeon H. R. CARTER, for duty. July 13, 1899.

FOSTER, J. P. C., acting assistant surgeon. Granted leave of absence for thirty days. July 11, 1899.

STEARNS, W. L., hospital steward. Relieved from duty at New York, N. Y. (Stapleton, Staten Island), and directed to report to the medical purveyor, New York City, for duty. July 8, 1899.

ALLEN, G. C., hospital steward. Relieved from duty at Baltimore, Md., and directed to proceed to New York, N. Y., and report to the commanding officer for duty and assignment to quarters. July 8, 1899.

PECK, F. H., hospital steward. Relieved from duty at the Egmont Key Detention Camp and directed to proceed to Baltimore, Md., and report to the commanding officer for duty and assignment to quarters. July 8, 1899.

SOCIETY NOTICE.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION. — The Association will hold its ninth annual meeting at Washington, D. C., September 19, 20, 21, 1899.

D. PERCY HICKLING, M.D.,
Chairman Committee of Arrangements.

ERRATUM.

In the number for July 13th, on page 40, second column, line twenty-eight, "macrocytes" should read "microcytes."

RECENT DEATH.

RUSSELL STURGIS, JR., M.D., M.M.S.S., died in Boston, July 17, 1899, aged forty-two years.

BOOKS AND PAMPHLETS RECEIVED.

Hay Fever. By Carolus M. Cobb, M.D., Lynn, Mass. Reprint. 1899.

Infant Mortality in Massachusetts. By Samuel W. Abbott, M.D. Reprint. 1898.

Self Examinations for Medical Students. Philadelphia: P. Blakiston, Son & Co. 1899.

Signs and Tests of Death. By Justin Herold, A.M., M.D., New York. Reprint. 1899.

Modern Possibilities in Chronic Catarrhal Deafness. By Sargent F. Snow, M.D., Syracuse. Reprint. 1898.

White Dandy, or Master and I: A Horse's Story. By Velma Caldwell Melville. New York: J. S. Ogilvie Publishing Co. 1898.

Annual Reports of the President and the Treasurer of Harvard College, 1897-98. Cambridge: Published by the University. 1899.

Transactions of the Louisiana State Medical Society at its Nineteenth Annual Session, held at New Orleans, La., May 10, 11, 12, 1898. New Orleans. 1899.

On the Use of the Valeriantes of Creosote and Guaiacol in the Treatment of Pulmonary Tuberculosis. By A. B. Briggs, M.D., Ashaway, R. I. Reprint. 1899.

The Importance of Blood Examinations in Reference to General Anæsthetization and Operative Procedures. By Hamilton Fish, M.D., Ouray, Col. Reprint. 1899.

Electro-hæmostasis in Operative Surgery. By Alexander J. C. Skene, M.D., LL.D., Professor of Gynecology in the Long Island College Hospital, N. Y., etc. New York: D. Appleton & Co. 1899.

Peripheral Nerve Transplantation, with the Report of a Case in which the Sciatics of a Dog were Transplanted Successfully between the Severed Ends of the Median and Ulnar Nerves of a Man. By Reuben Peterson, M.D., Chicago. Reprint. 1899.

Materia Medica and Therapeutics: An Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, M.A. (Aberd.), M.D. (Lond.), Fellow of the Royal College of Physicians of London, etc. Philadelphia: Lea Brothers & Co. 1899.

Laboratory Work in Bacteriology. By Frederick G. Novy, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second edition, revised and enlarged, with frontispiece and 76 illustrations. Ann Arbor: George Wahr. 1899.

Chronic Appendicitis the Chief Symptom and Most Important Complication of Movable Right Kidney. The Relations of Movable Kidney and Appendicitis to Each Other and to the Practice of Modern Gynecology. Chronic Nephritis Affecting a Movable Kidney as an Indication for Nephropexy. The Hernia Guarantee and the Minimum of Confinement after Operations for Appendicitis with and without Pus. By George M. Edebohls, A.M., M.D., New York. Reprints. 1899.

Address.

NOT THE DISEASE ONLY, BUT ALSO THE MAN.[1]

THE SHATTUCK LECTURE.

BY JAMES J. PUTNAM, M. D., BOSTON.

(Concluded from No. 3, p. 57.)

EVERY thinking person is aware that our minds work under many masters; we might designate them as our "silent partners." Under normal conditions we have reason to congratulate ourselves at the useful division of labor which this arrangement secures; but when the mental harmony is broken by disease, these masters of the mind jostle and trip each other in their efforts to restore the balance, and then we feel the sort of dismay, the sense of alteration of ourselves, such as in old days was called possession by the devil. The acts that we do are only partly the acts of our personal wills: some of them seem inspired and even performed by a power which is more or less foreign, yet which we feel bound to obey. So Tennyson's sailor boy, who must and will run away to sea, says:

> "My mother clings about my neck,
> My sisters crying, 'stay for shame';
> My father raves of death and wreck,
> They are all to blame, they are all to blame.
>
> God help me, save I take my part
> Of danger on the roaring sea,
> A devil rises in my heart
> Far worse than any death to me."

Or, as the writer of the charming Harvard ballad puts it:

> "Within my earthly temple there's a crowd;
> There's one of us that's humble, one that's proud;
> There's one that's broken-hearted at his sins,
> And one that, unrepentant, sits and grins;
> There's one that loves his neighbor as himself,
> And one that cares for naught but fame and pelf.
> From much corroding care should I be free,
> If once I could determine which is me."[2]

We have not the right, even where we have the wish, to deny our responsibility for the acts of these hidden forces of the mind, and it is a high function of education to enable us to understand and to control them; to make the desirable "me" prevail.

And thus queerly constructed, and perhaps with the demon of distrust looking through his eyes and speaking a language which his words vainly strive to contradict, the patient comes to the doctor, carrying his burden of morbid habits, as Christian, in "Pilgrim's Progress," carried the burden of his sins, seeking for explanation and relief. How shall he be met?

The answer instinctively suggests itself: by some sort of treatment akin to "hypnotic suggestion." This name excites great prejudice in many minds, and I should be glad to have it forgotten until the principles on which such treatment rests shall have been indicated, and the fact made evident that the methods designated differ only in degree from other modes of influence such as every physician uses in his daily practice and every person of strong character in the contacts of daily life. The analogies that suggest themselves in these directions are, in fact, so striking, that there is risk of going too far toward making out the hypnotic method to be an affair of everyday occurrence. One often hears the influence which society exerts over its members spoken of as "hypnotic," and it is quite as justifiable, and more to our purpose, to extend the conception so as to cover the case of a hypochondriacal patient whose judgment and reason have been captured by a morbid habit or a delusion of disease. There are times when we all become unusually impressionable to external influences or to the promptings of our own instincts; and it is clear that this is made possible by the withdrawal of the critical and questioning faculty that stands like a Cerberus at the door of the mind and is the enemy of all impressionability except of its own choosing. It is by no means to be assumed that the person thus altered is necessarily reduced to a lower plane. We make ourselves voluntarily more impressionable and less critical for the purpose of listening better to the whisper of our genius or our conscience, or to the whisper of one such voice chosen out of many:

> "Though love repine and reason chafe,
> There came a voice without reply,—
> 'Tis man's perdition to be safe,
> When for the truth he ought to die.'"

Even the means by which the impressionability of health is voluntarily secured sometimes present a striking resemblance in detail to those which are used for the purposes of hypnotic suggestion. Take, for instance, the case of a person who is striving to recall some name or fact. The whole substance of his effort consists in eliminating everything that stands in the way of complete passivity. He sits fixedly gazing at some object, yet taking no heed of what he sees; he hears the ticking of the clock with unusual intensity, but the sound does not reach beyond the ear, and serves only as a means to keep him from entertaining any stronger interest that might prevent his catching the first glimpse of the real object of his desire, if, by chance, impelled by the hidden forces to whose influence he submits himself, it should drift across the field of his mental vision.

I need not pursue these analogies further in order to convince you that a patient staggering under a tormenting and dominating habit has no reason to feel humiliated when he yields to an influence so familiar as that which I have indicated, in order to make himself impressionable to the words of encouragement from the physician in whom he has confidence, and who is striving by these means to reveal to him another and truer picture of himself than that with which in his delusion he has been so long familiar. And this applies also to the child, impressionable by nature both to evil and to good, and sometimes a victim to tricks of bodily and mental habit which can be removed only by deep-reaching influences of these sorts, if even then.

A sweeping condemnation is often brought against the use of hypnotic suggestion, based on the assumption that it involves the subjection of the will of the patient to that of the doctor. But this same sort of influence is exerted daily in the schoolroom, in social intercourse, and most of all in the army, and the results are good or bad according to the obvious intention of the method, and to the intelligence or ignorance, the high-mindedness or low-mindedness of the person by whom it is brought to bear. The physician who domineers over his patient, or makes him a slave to needless rules, can weaken his independence with-

[1] Delivered before the Massachusetts Medical Society, June 13, 1899.

[2] E. S. Martin: Sly Ballads in Harvard China.

out hypnotic suggestion; while he who is bent on strengthening the patient's will can and must call special methods, analogous to those of hypnotic suggestion, to his aid. Nevertheless, the final aim of the doctor, as Madame De Staël said of the legislator, should be to make himself unnecessary, and we may add, in company with the sturdy Sir James Paget, to make, if it is warrantable, even his rules unnecessary.

For the attainment of the ends that I have indicated the patient must be taught to let his critical instinct and his will lie passive at first, while the new set of motive-impulses is being presented, but finally to use them for reinforcing the new mental attitude which they could not have created alone. The part thus assigned to the will is not a wholly negative one, and the imputation that the patient grows strong solely through another's effort is only correct if the treatment stops short of the final stage. In fact, the whole treatment, from first to last, and at every stage, involves the patient's consent and co-operation. This passivity or "consent," whichever one may call it, of the critical instinct and the will may be induced in many ways. The teacher secures it when he exerts over his pupil the fascination of his personal influence for the purpose of interesting him in his tasks; the physician secures it when he induces his patient to sit or lie quietly with muscles relaxed and senses engrossed, so that he shall listen without inclination to comment on what is said, or shall allow his own sense of encouragement and hopefulness to take deeper root. If, after such treatment, the patient comes and says: "I heard what you said, but cannot now repeat it," and if, thereafter, his act shows the reappearance of the newly-suggested impulse in the form of an apparently spontaneous product of the patient's thought, the most desirable result will have been attained. This kind of treatment may be called "hypnotic suggestion" if one will, but the prejudices that this word used to excite would never have arisen if such therapeutic measures as these had alone been in question.

It would, however, be disloyal not to recognize that even the experimental uses of hypnotic suggestion, objectionable as in some respects they are, have been of high value to medicine. It is to the studies made possible by hypnotic methods that we owe much of our present familiarity with that part of the mental life that lies beyond the direct reach of our personal attention, and if to this we add the service that treatment involving profound hypnotic influence has rendered in many cases of serious and otherwise incurable disorders we have abundant reason to be grateful for Braid's and Liébault's discoveries. Nevertheless, it has, fortunately, been found that the actual induction of the hypnotic sleep is far less often necessary, so far as therapeutic purposes are concerned, than was formerly believed. The results effected through it have given the hint that simpler methods might suffice, and so have inspired with new power the physician's confident assurance of improvement or recovery that gets the name of "waking suggestion." It is the patient's misfortune if this assurance does not reflect the most thorough diagnosis that science can command and the most hopeful prognosis that the conditions, *taken at their best*, can justify. Unfortunately, it sometimes happens that the very scientific training which justifies the physician's dignified position of authority in the community acts to prevent him from "taking at their best" the influences that make for a good prognosis. The capacity, one might also say the genius, for improvement which the patient often shows is apt to be underrated, just because it is so mysterious, so undefinable, and so wayward. Both physician and patient need to realize more fully that the latter has, to a considerable degree, the germs of a real power of control over his bodily and mental states, provided his personality is conceived of in a sufficiently broad sense.

Whatever be the method by which the influence is secured, the treatment of these diseases of association and habit must follow one of two familiar courses. The first is that of eliminating from the mind the troublesome and recurrent impulse or habit; the second, that of introducing another impulse incompatible with the former and tending therefore to its exclusion. Both of these attempts are made in education of every sort, but it is safe to say that the latter is by far the more successful of the two, and is in fact the one which mainly does the work even when it is not ostensibly employed. It is wiser to build up than to pull down, to induce virtue than to eliminate vice, to get rid of morbid thoughts by supplanting them with others that are better, or to utilize them as materials for growth rather than to conduct a campaign against them. The restoration of motion is the essential factor. The swiftly-flowing river will quickly absorb the muddy brooks that enter at its sides. That is, to say the least, the "Western" as distinguished from the "Oriental" mode of progress. It is true that great therapeutic advantages have seemed from time to time to have been gained by seeking out and casting out a painful or bitter experience which had been germinating, perhaps for years, in the mind, hidden from view except in its morbid manifestations, which took the form of hysterical outbreaks, moods of depression, disordered sleep and other phenomena of like character. Several remarkable series of cases[10] have been reported where such ideas have apparently been traced to their lair and then exterminated, and with them the complex organization of morbid ideas and emotions of which they formed the centre. I believe, however, that this explanation of the therapeutic successes which have unquestionably been achieved in such cases is not necessarily the correct one. One may readily believe that if a patient could be brought to give his tacit consent to any theory of the cause of his troubles which the ingenuity of the physician might suggest, he would gain new hope and receive an effective impulse toward recovery, even if the theory which was offered him was not the true one. The main point is, I believe, to secure a nucleus for a new set of associations which shall be exclusive of the old ones. The patient is to be taught to push ahead in the direction of health and activity as one pushes his way through a thick forest, regardless of the scratches and bruises to which he is exposed on the way, and it does not greatly matter whether the path of escape is or is not identical with that which was followed when the way was first lost, except in so far as that it is important to gain the patient's ready acceptance of the path actually proposed.

Unfortunately, even the much vaunted hypnotic suggestion often fails to work; or if the new suggestion seems at first successful the morbid habit may in

[10] See contributions by Dr. Russell Sturgis on the Use of Hypnotism to the First Degree, in the New York Record, Feb. 17, 1894; also Ibid, 1899. The earlier publications by Janet, Breuer and Freud, and others should be noted in this connection, and also Loewenfeld's excellent criticism in his Psychotherapie.

the end settle heavily back again. Is "Philip drunk" or "Philip sober" really the stronger and more consistent character? This is a question which the doctor often has to ask himself and to which, perhaps, it is only by trial that he can find the answer. Fortunately, in the memory of Philip sober there may be groups of half-forgotten experiences[11] dating back perhaps to the days of his youth, and capable of forming, by their union with the new impulse, a temperament sympathetic with the better course, and thus he may be enabled to prevail. One may try to express such conditions in terms of cerebral anatomy and physiology, but it is doubtful whether, in the present state of our knowledge, a clearer conception of the process would thereby be gained.

Fortunately for the educational outlook, the evidence has begun to accumulate that a morbid inheritance is not the inevitably crushing and baneful thing that it has been thought. We come into the world, each one a being of limited capacity but in other respects free to become what circumstances make us, and responsible, to the extent of our capacity, for our lot. We bring no ticket-of-leave which stamps us as drunkards or maniacs on probation, but we do bear, in the histories of our ancestors, a certificate that hints by what efforts and by what avoidances we can make ourselves reasonable successes in our respective lines. There is no original sin, and not even, as it seems to me, original propensity, but only original capacity and original limitation, and even limitation is only another name for latent capacity.

A highly interesting side-light is thrown on the discussion between these two doctrines — the fatalistic doctrine of propensity and predestination, and the more hopeful doctrine of plasticity limited only through capacity — by the evidence adduced in a somewhat similar discussion which has been going on among the embryologists. What is it that gives our bodies their definite and ever recurrent form? Do the nerves as they pass from their centres of growth to their destination in the skin and in the muscles bend and twine to find their passage in obedience to some inherent tendency of growth, or does each cell-process start out not only ignorant of its future but without a positively defined future, and make its way in obedience to mechanical laws of least resistance and simple laws of growth, just as a rootlet makes its way amongst the stones in its seemingly inspired search for the distant water? If I understand aright the teaching of the present day, the latter is the case. This teaching does not aim to rob heredity of its powers, but, in so far as it is applicable to the problems of mental growth, it does glorify the influence of education in making us what we are. The child of the drunkard does not inherit drunkenness, but he does inherit a defective brain, a brain liable to go wrong perhaps in many ways but reclaimable to a considerable extent through education; just as the child of the tuberculous parent does not inherit tuberculosis but the soil on which it may develop. The difference between these two doctrines is more than an academic quibble. It is one of vital tendency.

The cases that I have thus far had in mind have been of relatively curable sorts, either because the patients had traditions of good health to look back upon, or because it was assumed to be possible to cast out some special fixed idea, or habit, or delusion of illness, which had arisen in consequence of some more or less accidental experience, but still lay loosely attached in the mind, or, at any rate, had not become, through the bonds of association, an integral part of the great body of ideas and feelings on which the patient's mental life revolved. But these disorders arise more readily, strike their roots wider and deeper, and keep a more tenacious hold if there is a native defect in the mechanism of the nervous system such as we see in that great class of cases which for convenience's sake may be grouped as *constitutional neurasthenias*. With such patients the problem of treatment is often not so much to rid them wholly of the consciousness of their symptoms as to aid them to look through and beyond their troubles, and eventually in some degree to ignore them, as one learns to ignore a defect in vision.

If patients with this sort of illness are often plagues to themselves they are no less a source of sighs and groans to their doctors and their friends. Yet they are among the best and keenest people in every community, and it may even be said that it is their doctors and friends who are in a measure responsible for keeping them what they are,— at least in the sense that salt was defined by the small boy as that which made potatoes taste so bad when there wasn't any on. In other words, they would be better off if we knew better how to appreciate and to treat them. Liable to fatigue, and unable to accomplish as much as their robuster neighbors, such patients become keenly alive to their failures, and are apt to fall into mental habits marked by baffled reason, morbid self-consciousness, and balking will. Beginning by suspecting and hesitating, they often end by ceasing to act. The limitations set by the original "weakness" are of trifling consequence as compared with these secondary and needless incrustations, framed from false premises by the patients' inexorable logic. But the balking will, like the balking horse, can often be trained to work again; the obstacles that seemed so invincible when tangled into a web made up of the memory of past failures and fears can often be overcome if taken piece by piece.

Fortunately, it is by no means every neurasthenic patient whose case takes the unfavorable course that I have indicated. There are many persons, weak in body but unconquerable in spirit, who keep themselves free from this entangling web of troubles. They make unnecessary the therapeutic suggestions of the physician by accepting their limitations as indications for casting about to decide on their best course for the future and best means of usefulness for the present, and striving to regard the tasks imposed by illness in the same light as the tasks imposed by health. Such persons give new meaning to the fine words that Tennyson puts into the mouth of the aged Ulysses:

> "Tho' much is taken, much abides; and tho'
> We are not now that strength which in old days
> Moved earth and heaven; that which we are, we are;
> One equal temper of heroic hearts,
> Made weak by time and fate, but strong in will
> To strive, to seek, to find, and not to yield."

The problem for the physician in dealing with patients to whom such a course as this does not come instinctively is to use all the means that may lead to its adoption. If there is any slender thread of interest or enthusiasm or even of fanaticism in their composition

[11] See Dr. Mary Putnam Jacobi's paper, A Suggestion in regard to Suggestive Therapeutics, in the New York Medical Journal for April 9, 1898.

it should be recognized and encouraged. And, happily, the slender thread is often enough. It has not the all-embracing power of the large and warm temperament of hopefulness, but what is lacking in massiveness may in a measure be made up for by intensity. The almost fierce glow of energy and fortitude seen in some of the frail-bodied New England women portrayed by Miss Wilkins gives a good illustration of this principle.

Neurasthenic patients cannot, as a rule, be expected to overcome their troubles alone. We say to them, "make an effort of the will and do this or that," but the will cannot create situations, but only choose between them, and although it is true that a better choice usually exists than that which the patient makes, yet to see this and to choose correctly is a task of no little difficulty. Such a patient is compelled at each step to compare the act which he wishes to accomplish with that which he wishes to avoid, and so the latter is presented afresh with all its imperative fascination, as a card is forced on a novice by a skilful player. It is the physician's part to present a new alternative for the reason to adopt and the will to act upon. When such patients clearly understand that, with patience and the cultivation of a dogged indifference to symptoms which are unimportant though annoying, they can learn to note and to accentuate their powers of accomplishment and enjoyment, the ground is already cleared for the action of food and tonics, recreation and active work.

An element of special encouragement and mental stimulation in particular directions may be made to accompany treatments designed ostensibly to fulfil other needs. The famous so-called "rest cure," which the genius of Weir Mitchell devised, owes the remarkable success which it exhibits in able hands less to rest and food in themselves than to the mental influences that go with the isolation, the scrupulous precautions that leave no excuse for indigestion or fatigue, the obvious confidence of the doctor and the nurse, and the contagion of recovery such as permeates every successful hospital. All these changes in the patient's surroundings are often, from the point of view of mental influence, more effective than a journey to Europe, though even as regards the latter the familiar lines:

> "Cœlum non animam mutant,
> Qui trans mare currunt."
> (They change their skies but not themselves,
> That cross the seas.)

are, luckily, not always true.

Many a doctor has tried the rest treatment and has failed, because he did not follow exactly Dr. Mitchell's rules, not realizing that in omitting certain "surely unessential" details he was leaving out the very heart of the mystery. On the other hand, I fully agree with Dr. Prince [13] that results similar to those accomplished through the agency of the "rest cure" may often be obtained through pure mental stimulation and education.

Take next the question of physical exercise, which may stand as a type of a whole class of treatments. You recommend it for your neurasthenic patient, but to what end? Do you wish to toughen his muscles, to help his digestion, to strengthen his heart? Or is it in fact recommended for the sake of introducing the leaven of energy, in the hope that it may finally infect his whole mental life? If such is your desire, five minutes of sharp exhilarating work or play will do what hours of chest-weights would fail to accomplish. Perhaps you may even start a love for the study of physical development and thus give a new impulse to an invalid life. It may be as when a boy, dull at his books and drifting into general incompetency, has the good fortune to meet some one who discovers that he is a genius at whittling, and who by encouraging him in this accomplishment gives him a chance which will in the end transform him not only into a good mechanic but into a man of first-rate, all-round capacity. And so, too,[13] relaxation of body may be employed to teach relaxation of mind. On the same principle, a soothing treatment by water or electricity may help to give the genius of sleep a better chance to control the currents of the mind.

It is worth while to note what a needless weight of sombre forebodings is often carried by a *word* or *name* to the patient's anxious mind. To feel "tired" may be bad enough at the best, but it makes a world of difference whether one accustoms himself to take the term as meaning the fatigue of a person who expects in due time to be rested, or as a bottomless pit of exhaustion, demanding sighs and groans. It is true, as Dr. James says,[14] that the drunkard's reform often dates from the day that he gives himself the unsavory name, it is equally true that needlessly alarming symptoms can often be unmasked on the reversed principle; as a legal friend of the writer once, in court, robbed an "excoriated tibia" of its terrors by rendering it as "barked shin"

Happy is the neurasthenic patient who has a sense of humor or a liking for philosophy, so that he can get a certain satisfaction from externalizing his troubles, as William Blake painted his visions and Bunyan put his into the Valley of the Shadow of Death. To learn to recall the good days on the bad days; to remember that the University of Leyden was founded during the starvation of the great siege, and to realize that limitations are also finger-posts to new sorts of progress, infuses a sense of triumph into one's efforts toward the self-forgetfulness of effective life. Many patients think that they are not gaining, because the signs of improvement are less obvious to them than the signs of failure. The latter stand out in painful isolation; the former lose their own identity in augmenting the general efficiency, just as the stippled spots of paint on the impressionist's landscape blend into a glow of color. Fortunately, however, the test of successful work and the sense of comfort that accompanies it usually tell the truer story, and the physician can powerfully intervene as an interpreter.

Neurasthenic patients are often led, partly by native temperament, partly through the circumstances of their illness, to seek philosophic views of life, and indeed without some familiarity with them even the buoyant satisfaction that successful work brings to the healthy mind leaves something to be desired.

The inspiring doctrine of individuality, with which the pages of Emerson are full, that heightens one's interest in the novelties which the light coming through one's own window, the touchstone of one's own genius, can alone reveal; the reassuring belief that urges us to "live ever in a new day," and forbids us to drag

[13] Educational Treatment of Neurasthenia: Boston Medical and Surgical Journal, 1898.

[13] As Miss Annie Payson Call has so well explained.

[14] Talks to Teachers.

around the "corpse of our memories" of evil; the great doctrine of "service," which presents only another aspect of the principle that if a man consistently follows the lead of his own best instincts he is sure to find that his interests are at one with those of an ever-widening community; such principles as these are like so many watch-fires, blazing up from the hill-tops into the darkness of the night.

In conclusion, I would say, as I said in opening, that every physician is an educator, whether he will or no, and should study to be a good one. He works of necessity with a threefold object in view: to cure his patient; to leave him better able to cure himself another time; and to establish systems of treatment that shall reflect sound and liberal views. He must of necessity come into close personal contact with his patient, and may therefore, through the powerful influence of his own personality, make him narrow or suspicious, or unduly dependent on rules and mysteries; or, on the other hand, more reasonable, more self-reliant, more liberal, a firmer believer in his own genius, and the supporter of simpler creeds. The opportunity for usefulness is an enormous one; for I hold that to rid a patient of a tormenting delusion and to increase his power of resistance against debasing habits and thoughts is quite the equivalent of a successful operation for a painful disease, and needs as much skill and preparation. It is to the opportunities and responsibilities of this task, which should not be evaded, that I have tried to call your attention.

The physician, too, must call the community to his aid; for many of these disorders start in the imitation of inferior social customs and in the acceptance of narrow social traditions, and we may confidently hope that they can be eliminated in part through changes in public feeling such as an intelligent doctor may help to set on foot. The community is neither intentionally ignorant nor intentionally heartless. It adopts the easiest and nearest opinion, and is readily open to change. We gather at our annual meeting to gain strength from the contact with each other, as Antæus from his Mother Earth; let us separate again, each to be a centre for the spread of knowledge not only of those forces whose effects are to be measured by the microscope and the chemist's tests, but of those also which no chemist can estimate, but which may, nevertheless, work upheavals in social sentiment, as the water which trickles into the crevices of the rock may one day freeze and burst it asunder.[15]

Original Article.

PERITONSILLAR ABSCESS.[1]

BY FREDERIC C. COBB, M.D., BOSTON.

PERITONSILLAR abscess may be defined as a phlegmonous inflammation occurring in the tissue surrounding the tonsil. Its best-known synonyms are quinsy and acute phlegmonous tonsillitis. Widely different views as to its causation are given by various authors. Bosworth and Lenox-Brown are firm believers in its rheumatic origin, while others believe it to be due to the entrance of germs into the peritonsillar tissue resulting from acute tonsillitis. In the records of my cases, the question of rheumatism could not always be decided, but the results are as follow: Those having no history of rheumatism numbered 18, while those in which the history was doubtful were 19, and those having a clear rheumatic history were seven. As to the question of whether the quinsy was due to infection from the tonsil, we can only judge by examination of its condition at the time of the peritonsillar inflammation. It must be remembered that even when tonsillitis precedes an attack, the tonsil may have cleared up when examined four or five days later, the time when peritonsillar cases usually present themselves for examination. In 24 of my cases there was no distinct lesion of the tonsil recorded, while in 18 the tonsil was clearly pathological, being either swollen or covered with exudation, while in seven only could no lesions be found. As to age, the youngest of these cases was seven years old, while the oldest was fifty-five; the largest number of cases, or 29, were between the ages of ten and thirty, those occurring between thirty and forty being only five, those below ten years, but three.

Pathology.— The pathology of quinsy does not differ from that of any pus formation in cellular tissue elsewhere, the especial point of interest being found only in the study of its anatomical relations. Most authors speak of the inflammation as localized in the tissue immediately surrounding the tonsil. Chiari alone suggests that pus is to be found in the pharyngomaxillary space. This space is well described by Zuckerkandl in his paper on the "Relation of the Tonsil to the Great Vessels." The pathology of peritonsillar abscess can be understood only by an anatomical study of the tissues surrounding the tonsil. The tonsil is bounded in front by the palatoglossus or anterior pillar, behind by the palatopharyngeus or posterior pillar, some of the fibres of which pass around it in such a way as to form a kind of sling. Its inner side is free, while on the outer it is in relation with the amygdaloglossus and the styloglossus, which are small muscles, and some fibres of the posterior pillar or palatopharyngeal, as heretofore mentioned. Directly outside of these few small fibres we find a hard fibrous-tissue wall about one millimetre in thickness from which fibrous septa run into the tonsil. On removing this tissue we come upon the superior constrictor of the pharynx, a muscle of much greater size than those just mentioned, and, continuing outwards, upon the buccopharyngeal fascia which lines its external surface. This fascia forms the inner wall of the pharyngomaxillary space, a cavity of considerable size when dilated. This space is described by Linhardt as a cavity filled with connective tissue and fat between the side wall of the constrictor, the internal pterygoid and the upper vertebræ, containing in its posterior part the great vessels of the neck. It was left to Zuckerkandl to show that this space was divided into two smaller ones by the styloglossus and stylopharyngeus muscles. These form a partition wall, back of which, in the rear of the space and behind and to the outside of the tonsil, lie the great vessels of the neck. The extent and appearance of this space is well shown by a cross-section of the head at the level of the teeth

[1] Read before the American Laryngological Association, May 22, 1899.

[15] I am aware that an account of "mental therapeutics" could make no claim to completeness, even in outline, if it did not discuss the limits of action of this agency. Nevertheless, this part of the subject is too large to handle briefly, and too important to dismiss summarily. I therefore leave it for another occasion, and content myself with a reference to the treatment of these affections which the general practitioner must treat on the lines here indicated, if he wishes for success.

and the lower jaw taken from Testut's "Anatomy" (Fig. 1). It will be seen that the space extends nearly to the angle of the jaw by a prolongation between the pterygoid and the superior constrictor muscle. This explains why abscesses sometimes break near the wisdom teeth. The walling off of the posterior portion by the muscles spoken of is not, however, so clear in the diagram as it is on dissection of the parts.

In order to assure myself that this partition was efficient, and also to trace the direction of least resistance to the passage of fluid in this space, I injected the cadaver, through the tonsil, with wax, passing the point of the needle well through the constrictor muscle into the pharyngomaxillary space. The result was gratifying, the injection passing in quite easily and giving the palate a very characteristic appearance of peritonsillar swelling. After allowing the wax to harden, a cross-section of the part was made just below the hard palate, and the route of the injection traced (see Fig. 2, with accompanying diagram, Fig. 3). It was found to have filled the space extending along the lines spoken of in Testut's diagram, toward the region of the teeth anteriorly as well as into the soft palate, or as far as its junction with the hard palate. Figure 2 corresponds with Figure 3, the dark spaces showing clearly, after the wax has been removed, the pharyngomaxillary fossa, the muscles and vessels of which are outlined. The injection did not extend into the space occupied by the great vessels in the rear of the pharyngomaxillary space, but it was stopped by the diaphragm formed by the styloglossus and the stylopharyngeus muscles. On removing the wax from the pharyngomaxillary space, a deep cavity was found extending not only beneath the tonsil but also above into the soft palate. The distended cavity could have contained three or four drachms of fluid easily. The presence of pus in this space would, it seems to me, explain the usual phenomena of peritonsillar abscess. In order to reach the posterior pillar, pus must force its way either through the soft palate from the upper part of the space and so infiltrate the pillar, or it may pass through the superior constrictor above or behind the tonsil directly into the pillar. The portion of the constrictor at which least anatomical obstruction was found appeared to be just above and below the tonsil, between the anterior and posterior pillars. It is to be noted that the fibres of the anterior pillar and those of the constrictor cross each other at an angle, a fact which may explain the occasionally ineffectual results of puncture of the abscess.

It is not of course claimed that all abscesses arise in this space, since removal of the tonsil sometimes exposes an abscess cavity at its base, but it is claimed that many cases of peritonsillar abscess owe their clinical appearance to the accumulation of pus in the pharyngomaxillary space forcing both the tonsil and peritonsillar tissues forward and inward. If pus were situated between the tonsil and the pillars, it would force the pillars outward and the tonsil inward at the same time, yet we usually find the tonsil occupying its normal relation to the pillars, the whole being, as I have said, pushed inward and forward. The very large amount of pus often found in these abscesses is, it seems to me, too great to be accounted for by its presence in the small areolar space at the base of the tonsil. Assuming that this space is the seat of the pus formation, it would seem natural that it should sometimes force its way backward among the great vessels in the neck in spite of the septum already described. Clinically such cases have been recorded. Bosworth cites a case reported by Reid[1] in which pus burrowed along the vessels into the mediastinum; another by Kiemann[2]; and a third by Velpeau[3] and Beraud, in all of which the pus had burrowed along the vessels into the cellular tissue of the neck, sometimes extending into the mediastinum, in two of the cases causing a pleurisy.

Symptoms. — The symptoms of peritonsillar inflammation observed in my cases have not differed from the clinical picture. Patients usually presented themselves between the third and sixth day, with great increase of saliva and complaining of great, usually unilateral, pain on swallowing. The voice was dry and thick, the temperature always considerably above the normal. The duration of most of the unpunctured cases was seven days, but occasionally one lasting ten days or even two weeks was encountered. The soreness, however, from which the history of the beginning of the peritonsillitis was derived may have dated from an acute tonsillitis preceding the abscess formation. In one case pain existed before any peritonsillar swelling appeared, and it was not until two days after that the peritonsillar swelling became noticeable. In none of the cases were there symptoms of the extension of the swelling beyond the fauces.

Treatment. — Almost all the cases presenting themselves for treatment were so far advanced that it seemed hopeless to try to abort the abscess by salicylates, aconite or guaiac. Indeed, early experience with acute peritonsillitis had not given me much encouragement to pursue this treatment. The main and most important question seemed to be, when and where to open the abscess. The usual point selected was in the median line above the tonsil between the root of the uvula and the gingivopalatal fold. When incision was made here it often happened, even after the most generous opening, that the wound closed, and that twenty-four or thirty-six hours later the abscess ruptured elsewhere. In such cases pus was not seen to ooze from the location of the puncture, but either the opening could not be found or pus exuded from between the pillars, usually above the tonsil. All the cases, of course, could not be followed, but the average date of relief in the cases punctured was almost exactly that of those unpunctured, which was a fraction under seven days. The closure of the punctured cases seems to me to be due to the differing direction of the muscle fibres of anterior pillar and superior constrictor. When the knife passed into the wound these layers were in abnormal relations to each other on account of the tension caused by the gagging movements of the throat; when the throat again became quiet the muscles assumed their normal relation, the openings sliding over each other so as to close the vent made by the knife. It was noticed that wherever a yellow spot in the palate seemed to indicate the pointing of the abscess relief after incision was instant and persistent. The explanation of this, it seems to me, is that the muscles were here glued together by the inflammatory exudation in such a way as to prevent the riding-over motion spoken of. By far the most usual point of passage of pus was found to be between the pillars of the fauces above the tonsil, suggesting that to puncture in this locality would

[1] Medical and Surgical Reporter, Philadelphia, 1888, vol. xlix, p. 367.
[2] Wien. med. Presse., 1882, vol. xxiii, pp. 1, 520.
[3] Manual de Anat. Chirurg., Paris, 1883.

Fig. 1.

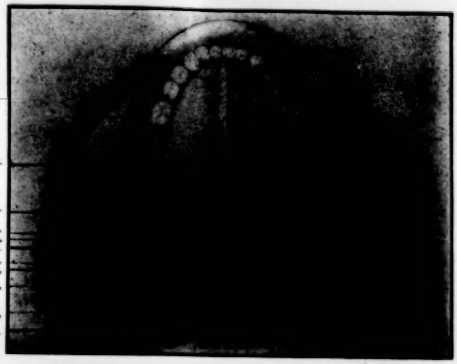


Fig. 2

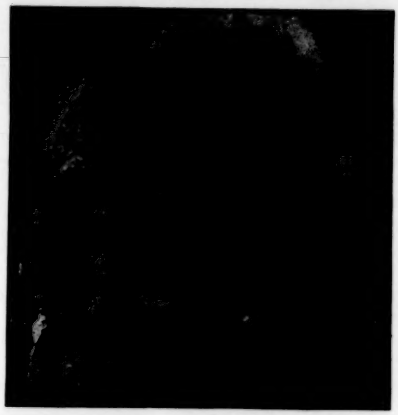
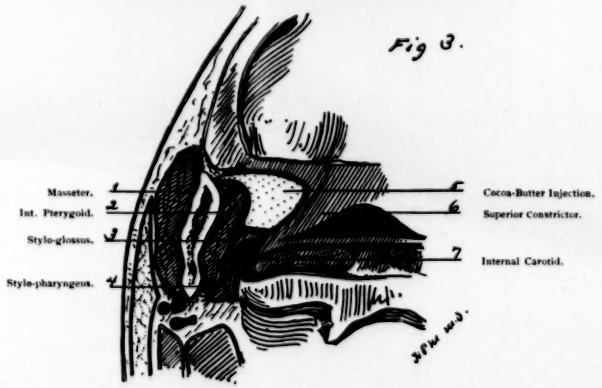


Fig 3.



Transverse Section of the Head slightly below the Hard Palate.

be following nature's indication. The danger from hemorrhage of such a puncture would not be great, since the large vessels lie in a plane posterior to that of the posterior pillar. The knife used should be a right-angled one in order to avoid passing this plane.

Summary.—The whole number of cases examined was 44.

(1) No causative relation could be proved to exist between rheumatism and peritonsillar abscess.

(2) An acute inflammatory condition to the tonsil was found to exist in a sufficient number of cases to suggest that it may be the cause of the infection to the peritonsillar tissue.

(3) A study of the pharyngomaxillary space shows: (*a*) that its injection with wax on the cadaver may produce an appearance similar to the peritonsillar abscess as seen clinically; (*b*) that its distance from the surface of the palate may account for the depth of the puncture often needed in order to obtain pus; (*c*) that the cross action of the muscles covering the space seems a sufficient reason for the closure of punctures made into it; (*d*) that the supratonsillar fossa and the infratonsillar space offer the surface for puncture most free from anatomical obstruction; (*e*) that puncture anterior to a plane passing through the posterior pillars cannot injure the great vessels if the knife be kept at all times anterior to such plane; (*f*) that the space is divided into two cavities by a septum formed by the styloglossus and stylopharyngeus muscles. This in most cases protects the great vessels from purulent infiltration. Failure of this septum to act explains the cases cited by Bosworth where pus passed along the great vessels into the mediastinum.

In conclusion, I wish to express my thanks to Professor Dwight, of the Harvard Medical School, for both advice and material, and to Dr. H. P. Mosher, for his excellent photographs and drawings, and for much valuable assistance in the preparation of specimens.

Clinical Department.

A CASE OF SEPTICEMIA TREATED WITH NORMAL SALT SOLUTION.[1]

BY CARROLL E. EDSON, A.M., M.D., DENVER, COLO.

DURING the past ten years increasing attention has been directed to the intravascular employment of normal salt solution in cases other than of hemorrhage. Since 1896 especially has its use been tried in cases of general sepsis of varying origin. The considerable and exceedingly interesting literature upon the subject was well summarized in an article by Dr. T. F. Reilly in the *Medical Record* of November 12, 1898.

I report the following case as a clinical contribution to the increasing number of successful cases that I may help, in whatever small measure, call attention to this ready and simple means of combating what has else been too often a prolonged and hopeless struggle.

I regret the absence of full bacteriological and blood examinations. I should not ask attention to an imperfect protocol were it not for the striking and suggestive lesson which the case affords.

C. M., age twenty-six, single, an electrical engineer, had been under my close observation for a year, during which time he had two typical attacks of follicular tonsillitis. The family and previous personal history have no bearing upon the illness under consideration. In 1896 and 1897 he had a severe and rather prolonged fever, which may have been typhoid, although reported not to have been. His habits and conduct of life had been exemplary and his health always good.

In the spring of 1898 he was much overworked, and from the first of May until his illness in November had in addition to overwork great business responsibility and anxiety. He was much run down and sleeping poorly. Early in November he suffered from a moderately severe attack of an infectious angina then epidemic in Denver. The throat was intensely sore and there was considerable glandular swelling in the neck. The tonsils were not more involved than the rest of the throat. There was no follicular exudation. No bacteriological examination was made, but the case was similar in every way to others during the epidemic in which cultures were made, and was probably due to a streptococcus infection. Recovery was slow, with great prostration. He returned to work too soon, against advice. During the next week at the office he complained of muscular soreness and weakness.

On November 24th his throat, which had been slightly uncomfortable, became very painful again and there was great backache, headache and high fever. During the next two days the attack ran a course similar to the first, save that there was more general pain tending to localize itself about the joints. On this account treatment by salicylates and alkalies was given, with anodynes and opiates. No relief was obtained. The muscular and joint pains became worse although there was little or no swelling. There was great difficulty in securing sleep; the temperature remained high, and it was evident that the illness would be prolonged.

On the 28th the condition became rapidly worse. While the temperature and pulse remained where they had been for several days, in the neighborhood of 101° and 110 beats per minute, the respirations rose to 35 and soon to 40. There was no conscious dyspnea, no local pleuritic pain to be distinguished from the great muscular aching everywhere present. Careful examination disclosed nothing more than a small area in the middle of the upper lobe of the right lung, with very slightly heightened percussion note and harsh and distantly exaggerated breathing. The heart was negative, and it may here be stated that daily examination never revealed any evidences of endo- or pericardial lesion.

For the next three days there was much intestinal distention, with a good deal of tenderness, which was not localized. There was some vomiting and troublesome belching. The bowels were finally opened by calomel, salines, and high enemata and the gaseous distention relieved by repeated enemata of asafetida mixture. During the rest of the illness there was fortunately no disturbance from the intestinal tract, and, with the exception of a few days during which there was slight febrile albuminuria, the urine remained normal.

The area of suspicious import in the lung did not increase and there was no development of any actual pneumonic process. There was lingering and rather shifting evidence of slight congestion over small patches in the upper right lung for a week or more. The respirations however remained continuously rapid

[1] Read before the Medical Society of the State of Colorado.

and rather shallow. The pains rapidly became absolutely crippling. The knees, ankles, hands, elbows and shoulders were successfully and irregularly invaded.

There was only very moderate swelling, which appeared to be not so much in the joints as an edema in the tissues about them. Over the backs of the hands this was especially noticed. There was at times a very faint blush over small areas, but never noticeable unless looked for. There was also very great tenderness over the muscles. Indeed, it was difficult at times to say whether the pain, which made it almost impossible to move or care for the patient, was caused so much by the motion of the joints as by the pressure upon the muscles. The best, though only slight, relief obtained was from painting the parts with 20 per cent. ichthyol and wrapping them in water with hot bottles outside.

There was almost absolute insomnia, and the few moments' rest obtained was marked by incessant delirious conduct of business affairs. For a while trional gave a little rest, but codeine, chloral, morphine, laudanum or even hydrobromate of hyoscine had little effect in quieting the increasing restlessness, and none procured any satisfactory sleep.

The condition on the 5th of December was most desperate. The temperature chart did not convey any idea of the illness, and is not reproduced for that reason. There was marked emaciation and a frightened look of distress upon the ashy face which can hardly be described. The decubitus was one of complete muscular relaxation, the limbs helpless from the pain, which made the patient moan if he saw any one even approach the bed. The temperature remained steadily between 101° and 102°, the fever being slightly higher on alternate days; the pulse, varying from 110 to 118, was weak, small and compressible, but regular. The respirations remained constantly rapid, about 35, but from time to time there were periods of great distress in breathing unexplained by any discoverable cause. There was very great restlessness, amounting to jactitation much of the time, insomnia and delirium at night, and by day a curious mental state of apparently clear cerebration which, however, was not real. Close watching showed that the mental processes were decidedly clouded and the patient has no recollection whatever of the events of some ten days. There were no rigors or marked fluctuations in temperature, but the man was frequently chilly. Considerable soothing followed hot alcohol baths. Despite nourishment, which was well taken, and abundant stimulation (sulphate of strychnine, one-thirtieth of a grain subcutaneously every four hours, and five drachms of whiskey every two hours), the patient was evidently fast succumbing to the septic invasion.

The injection of normal salt solution into the tissues seemed to offer slight hope and its use was approved by Dr. W. H. Bergtold and Dr. C. A. Powers, who saw the patient with me. At four o'clock on the afternoon of December 5th Dr. Powers injected sixteen ounces of hot sterilized salt solution into the subcutaneous tissues about the breast. Following the injection there was perhaps slight improvement in the restlessness and several quiet naps of from ten to forty minutes. There was an abundant and considerably increased flow of urine in the next twelve hours, nearly double the amount of the corresponding length of time before. Between 12 and 2 A. M. there was a period of very great restlessness and excitement, during which time it was very difficult to keep him in bed.

The morning of the 6th there was no especial improvement in the temperature, pulse or respiration, but the pain was decidedly less and the general condition seemed to warrant a continuation of the treatment. At 8 A. M. twenty-six ounces were injected slowly into the median cephalic vein. The injection caused great distress, a pulse of 120 and respirations of 40, with marked excitement for a short time, and profuse perspiration. Two hours later there was a sharp rigor lasting twenty minutes, the temperature rising from 100.6° to 103.8°. Following this the temperature fell gradually to 99.8° at 4 P. M., the lowest since the beginning of the illness. During the day the patient was much quieter than he had been and there was no note of any pain. The legs and arms were much less tender and the hands were used a little. At 8 P. M. the temperature rising to 100.8°, and there being a little return of pain, a third injection of eighteen ounces was made, this time under the pectoral muscles, as there seemed less disturbance and equally good results from intracellular injections. Following this there was no chill and only moderate sweating. A good deal of quiet sleep, with only light whispering delirium, was had during the night.

On the 7th there was much relief from pain in the morning, but during the day the restlessness, delirium and pain returned, and at 4 o'clock P. M. the temperature, pulse and respiration all being higher than for two days, a fourth injection of fourteen ounces was given. All the symptoms at once abated, the pain and the tenderness first. The pulse rate became lower and the quality better. The general expression of improvement was more marked than the signs of the chart.

On the 9th there was a rise of temperature which led to the consideration of further saline infusion, but this was postponed for signs of increasing pain, which did not develop. A similar rise on the 13th also proved a false alarm.

The subsequent history has nothing of general interest. The mild delirium lasted a long time, as did moderate fever and great weakness. The emaciation was extreme, and the patient absolutely unable to help himself simply from muscular weakness. Convalescence was necessarily slow after such an illness, but was uninterrupted, and by the first of June, 1899, complete.

The interesting features of this case were, *first*, the nature and location of the septic process. While I lack all bacteriological proof, I am inclined to think it was due to the streptococcus for the following reasons: It followed directly upon the recrudescence of an infective angina which was clinically the counterpart of others in which the streptococcus was found, and the absence of any suppurative process. A general typhoid infection was ruled out by the clinical picture of the illness, the absence of Widal's reaction and the probable typhoid character of the illness a year before. Nor was the picture one of a pneumococcus infection in the lungs. There was no consolidation, no characteristic expectoration. That the focus of infection starting from the throat became secondarily located in the lungs I am inclined to believe from the coincident appearance of the profound sepsis, the very rapid breathing and the signs pointing to moderate congestion. The shifting nature of these signs was

also a point in favor of a streptococcus invasion. There may have been some localization in the joints, but the pains seemed rather those of secondary irritation from absorbed toxins. This can of course be only conjecture.

Secondly, the very noticeable relief obtained by use of the salt solution. The lessening and cessation of pain, the quieting and clearing effect upon the brain, and the improvement in the pulse and whole general appearance were very striking. That this was not a chance coincidence seems proved by its immediately following four separate injections, the symptoms having returned after the lapse of a number of hours. Certainly up to the time of the first infusion the patient was steadily and rapidly failing; from that time began his recovery.

Lastly, the ease with which large amounts of salt solution can be injected under the skin if the fluid be allowed to run in slowly with gentle massage, and the quickness with which it is absorbed. So far as I could see, in this case the relief from the subcutaneous injections was quite as marked as from the intravenous infusion, while the disturbance seemed less. Other observers, however, have reported similar excitement from the subcutaneous use of the fluid. The sweating and free urination were noticeable after each injection.

Should I be so unfortunate as to see another so severe a case, I would make early use of repeated saline infusions, which can certainly in the light of our present knowledge do no harm, and which offer such encouraging results.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

(Concluded from No. 3, p. 64.)

RETRODISPLACEMENT OF THE PREGNANT UTERUS.

STORER[8] in discussing the subject says that there are no symptoms of consequence until about the tenth week, and they may be further delayed in a large pelvis. Spontaneous cure is limited by four things, adhesions, the sacral angle, the character of its displacement and its degree. The patient is often unaware of trouble until pressure symptoms come on. Urinary symptoms are apt to be the first thing noticed, more or less severe interference with micturition preceding actual retention. This is due to the upward pressure of the cervix on the urethra in versions of the uterus, and to a dragging on the urethra in flexions of the uterus. Constipation is also an early symptom. Upon examining a case of incarceration an exaggerated discoloration of the vulva is seen, and an extreme bulging of the perineum, which in one case, the result of a violent effort, caused a central rupture of the perineum and protrusion of the fundus. In flexions the cervix is accessible and not softened as usual in pregnancy, but there may be enormous hypertrophy. In uterine versions the cervix disappears behind the pubes often out of reach. The diagnosis is often very difficult. The displacements may become corrected as pregnancy advances, or pregnancy may go on to full term, the uterus becoming sacculated. Abortion more frequently occurs, although the retroflexed uterus has difficulty in expelling its contents and the fetus may be retained months after its death. If abortion does not occur grave results generally ensue without treatment, and 77 cases of death have been collected, mainly from sepsis, uremia and rupture of the bladder. Treatment is, first, to empty the bladder, which is often a difficult matter, and then attempts at replacement by manipulation are made. These consist mainly of depressing the cervix by traction from below and by pressure from above with fingers behind the pubes and at the same time pressing upwards on the fundus to release it, causing the uterus to revolve upon itself rather than attempting to force it up bodily. Elastic pressure in the form of water-bags in the rectum or vagina has been of service. If taxis fails, the patient's condition is good, and no urgent symptoms present, an expectant policy is advised up to the end of the fourth month, using careful packings, the knee-chest position, etc. Finally, an abdominal operation results in easy replacement without any great danger to the mother and with a better prognosis for the child.

OPERATIONS DURING PREGNANCY.

Noble[9] reports the results of his experience, which embraces twelve cases: one of myomectomy, one of hystero-myomectomy, one of appendicitis with abscess, one of intestinal obstruction after labor, and one of fistula in ano. The patient upon whom myomectomy was performed aborted, the operation having been undertaken for supposed ovarian tumors. He considers the operation not justifiable under ordinary circumstances during pregnancy. One other patient aborted, but the ovum was already dead before the operation, which only hastened the inevitable. All of the ovariotomies did well; in none of them was there the least difficulty in performing the operation, and in every way the patients made as good recovery as though they had not been pregnant. His experience corresponds with that of other surgeons and is in happy contrast to the results of the let-alone practice which so often leads to difficulties in delivery, and unless prompt and intelligent operative measures are taken, to the bruising, infection and necrosis of the tumors, with peritonitis subsequent to labor. In the case of intestinal obstruction, which proved fatal, the operation was complicated by the seven months pregnant uterus, which greatly increased the difficulties of finding the trouble in the abdomen and in dealing with the adherent bowel after it was found. This leads him to believe that it would be wiser in such a case, when dealing with so serious a condition as obstruction, to promptly do hysterectomy and get the big uterus out of the way, and then proceed in a systematic way to do whatever is necessary. He believes that all ovarian tumors which are recognized during pregnancy should be promptly removed even if quite late, as the risks of operation are much less than the risks of delay. Fibroid tumors should not be operated on during pregnancy unless for some very special reason. With reference to general operations in various parts of the body, while there is little danger of bringing on an abortion, yet he believes the indications for operations should be marked, that is, evidence should be present that the patient's life or health would be jeopardized by leaving the condition to continue until after labor.

[8] Boston Medical and Surgical Journal, March 9, 1899.

[9] American Gynecological and Obstetrical Journal, April, 1899.

HYSTERECTOMY FOR PUERPERAL SEPSIS.

Goffe[7] says the question or even the propriety of hysterectomy for puerperal sepsis has yet to be determined, as there is no affection in which it is more difficult to lay down general principles of action. Two definite forms of puerperal sepsis are recognized, sapremia and septicemia. The former is the result of the absorption of toxins or ptomaines secreted by germs growing upon a putrefactive focus. These are the products of the less virulent forms of bacteria, and the progress of the disease depends largely upon the resisting powers of the patient. Such cases are characterized by a chill and a sharp rise of temperature early in their history and by offensive lochial discharge. They should be promptly curetted with antiseptic douches, free drainage of the lymph vessels kept up by catharsis, and the patients stimulated and nourished well. If the symptoms then are not arrested, but there are signs of constant infection, indicated by continual rise of temperature, tenderness over the uterus, chills and languor, the question of operative interference arises. If on the other hand the infection is that of the pure streptococcus, the curette has no place. It simply breaks down the resisting zone and opens the way for ready entrance of the bacteria and in the more serious cases it cannot do good at the time of recognition of the disease, as the invasion has already passed beyond its reach. The nature of the treatment must be such as to assist the resisting power of the uterus against the invasion of bacteria. Bumm, the German pathologist, found that under favorable conditions an inflammatory exudate is found around the seat of invasion, which, aided by the phagocytic action of the white corpuscles, prevents penetration of bacteria to adjacent tissues, and the process is thus limited to a circumscribed area. But in more severe infection, or with less resisting power of the tissues, the bacteria break down the protective zone, enter the lymphatics and veins, and toxins and micro-organisms are carried through the system. A case of puerperal sepsis at the Polyclinic is reported at length. Curettage was first performed and afterwards abdominal hysterectomy, uterus and broad ligaments removed *en masse*. The walls of the uterus were studded with collections of pus, also ovaries and tubes contained pus. The patient died of exhaustion following septic pneumonia on the thirty-sixth day after operation. The author questions whether the fatal result was due to the delay in the radical operation, and if not what measures, if any, might have been used to prevent the case reaching the condition where radical procedure was necessary.

THE EFFECT OF POSTURE IN DELIVERY.

Dickinson[8] at some length reviews the literature and the experimental work done on the effect of the Walcher, the Trendelenburg and the Mercurio postures in altering the size and shape of the pelvis. The literature of the subject is considerable and the opinions of the different authors greatly at variance, but his studies lead him to made the following deductions:

(1) Posture will notably alter the shape of the pelvis in late pregnancy.

(2) Increase in available room in the pelvic cavity as a whole cannot be brought about.

(3) To obtain the longest conjugate at the inlet, the hanging dorsal posture is to be employed. The gain is nearly one centimetre.

(4) To obtain the longest conjugate at the outlet, the full-flexed dorsal posture is necessary. The increase promises to be from one and five-tenths to two centimetres.

[7] Medical News, January 28, 1899.
[8] American Journal of Obstetrics, June, 1899.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN. MEETING AT COLUMBUS, O., JUNE 6, 7, 8 AND 9, 1899.

THE afternoon session was the first held by this Section.

DR. A. H. CORDIER, of Kansas City, Mo., thanked the Society for the honor conferred on him in choosing him its chairman, and in the Annual Address commented on the progress of gynecic surgery in the United States. There has been a resurrection of old methods, which have been made safe and life-saving. At the present time the adaptability of the human intellect, enabling it to accept the good and to reject the useless, is best evidenced in the medical profession. In commenting on the advances in the department of gynecology he spoke of the surgical treatment of cancer of the uterus, which has been so unsatisfactory in many respects; yet early surgical intervention is justifiable. Calcium carbide has proved no more useful for this terrible disease than many other remedies that have been advocated. In cancer early and correct diagnosis is most important. The early recognition of gonorrhea and the avoidance of uterine sounding diminish the number of cases of pelvic suppuration. A few years ago vaginal enucleation of the uterus and adnexa for pus practically caused a war in the profession. In operating for abnormal conditions both the vaginal and the abdominal methods have their good points, but he chose the abdominal route as being more complete and almost perfect. In the treatment of the insane the neurologist and gynecologist should work together. In operating on the insane relief of pain and better general health only should be promised, and the alleviation of mental condition hoped for. Ectopic gestation is more frequently recognized than formerly. All cases should be operated on as soon as recognized, unless gestation be near its normal termination, when it is a question whether to wait or not for the viability of the fetus. The abdominal route should be preferred in the treatment of extra-uterine gestation. Serious hemorrhage may occur by vaginal incision, which would necessitate celiotomy for its control. The loss of the child in cases of contracted pelves can now be avoided by the selection of obstetric operation. Post-partum douches are not only useless but harmful, and should only be employed in women with gonorrhea, for the protection of the child's eyes. The origin of puerperal sepsis, and its production by unclean hands and instruments, are more clearly understood. Serotherapy promises, in the near future, to be of much use, and, in his opinion, puerperal fever may be relieved by immunizing and curative doses of antistreptococcic serum. Credé's ointment of the soluble silver salts has produced very remarkable results in the hands of some observers, results that have been so sudden as to astonish the physician. Time alone

will determine the usefulness of this method in puerperal sepsis.

Dr. Augustus P. Clarke, of Cambridge, Mass., read a paper on

PELVIC TUBERCULOSIS,

in which he remarked that the sources of contamination of the serous tissue are numerous. The principal avenues of entrance are along the loins from the intestinal tract. The morbid conditions resulting in adhesions of a portion of the intestine to the Fallopian tube and the subsequent ulceration or perforation of the united surfaces furnish, no doubt, one of the means by which the bacilli reach the adnexa. From the intestine to the mesentery, and from that point to the peritoneum and to the uterine appendages the bacilli may pass uninterruptedly. In many cases, if not in most, tuberculosis of the genital tract occurs in connection with the general dissemination of the disease in the other organs. This not infrequently takes place in childhood and before puberty. Tuberculous lesions of the adnexa originating through the blood supply, though occasionally observed, cannot be regarded as a common process. The three forms of the Fallopian tubes usually mentioned may very properly be reduced to two classes, the miliary and the fibroid varieties. Miliary pelvic tuberculosis may not pass beyond the first stage, or the disease may remain latent for varying indefinite periods. It is in such cases that a mere abdominal incision may be followed by apparent recovery, but it is not safe to regard the seeming recovery that follows celiotomy resorted to for tubercular peritonitis as being permanent in results. The chronic form of fibroid tuberculosis, in which the connective tissue is greatly increased, may become arrested in its course or in recovery. The connective tissue in its embryonic development having, of course, its origin in the same fibrous layer tends generally to the production of conservative processes. The preternatural development of the fibrous tissue in the tube, ovary, or other pelvic structure exposes the mass to the danger of becoming, through its diminished vitality, the focus of malignant degeneration. Observation proves that the presence of bacilli in the testes of husbands of women who are found suffering from tuberculosis of the Fallopian tubes should not be regarded as being positive evidence that the disease has been the result of transmission of bacilli from the husbands, for such infection of the male genital organs may have first been imparted from the female.

Dr. H. A. Kelly, of Baltimore, feels sure that coitus has nothing to do with tuberculous infection, and has never seen a case due to that cause. The tubes are not frequently the site of the disease, although the uterus is affected more frequently than is generally supposed. In three cases he has made diagnosis by microscopic examination of scrapings from the uterine surfaces. Tuberculosis of the cervix is very rare, and he has seen one instance only. In operating, all diseased tissues should be removed. The tuberculous uterus should be extirpated. Retroperitoneal glands should be carefully examined.

Dr. E. E. Montgomery, of Philadelphia, reported a case of tuberculous disease of tubes and ovaries occurring in a girl thirteen years of age, the condition being associated with diverticulum of the bladder. The patient had suffered from inability to retain urine. The tuberculous appendages were removed. The bladder was irrigated later, and a decided improvement was noticed.

Dr. Goldspohn, of Chicago, believed that the removal of caseous tubes renders the development of tuberculous lesions elsewhere less probable. He believes that the uterus and part of the ovary, if possible, should be permitted to remain.

Dr. C. G. Frederick, of Buffalo, N. Y., reported a case of double tuberculous disease of the appendages in which he performed supravaginal hysterectomy. The patient had a tuberculous abscess developing later, which was opened by the vagina, and general pulmonary tuberculosis developed later. Ruth reported a case of large ovarian tumor, complicated with tuberculous omentum in which pulmonary tuberculosis developed.

Dr. Cumston, of Boston, spoke of pulmonary tuberculosis coexistent with tuberculosis of the vermiform appendix, and gave evidence that the infection did not have to come through the vagina. He does not remove the tubes unless they are absolutely degenerated, but opens the abdomen and thoroughly irrigates, and, as a rule, permits the tubes to remain.

Dr. James F. W. Ross, of Toronto, discussed the difficulty of diagnosis in these cases of miliary tuberculosis. Hemorrhage is often a symptom of tuberculosis of the appendages. It occurs most frequently in young, unmarried women and cannot come from infection through the vaginal tract. Marvellous cures result from simple celiotomy and irrigation.

Dr. J. R. Eastman, of Indianapolis, Ind., called attention to the importance of diagnostic curettage and microscopic examination, with isolation of the tubercular bacilli.

Dr. D. Tod Gillian, of Columbus, reported an interesting case of calcareous degeneration in a tuberculous condition in which the calcareous plates were removed and symptoms relieved.

Dr. C. A. Reed, of Cincinnati, reported a case of general miliary tuberculosis of the intestines. One year later pulmonary tuberculosis developed.

Dr. Dorsett advocated the injection of antiphthisic serum and reported a case in which it had been used successfully.

GYNECOLOGIC CONSIDERATIONS OF THE SEXUAL ACT.

Dr. Denslow Lewis, of Chicago, Ill., read this paper. He emphasized the fact that man first seeks to live, then he seeks to make others live. Medical men in their deliberations should take cognizance of this great factor in human life. Lewis believes that sexual matters should be taught the young at an early age. Girls particularly should know the usual consequence of sexual intercourse. Their modesty may be shocked but their virtue will be saved.

Papers by Dr. John S. Pearson, of Louisiana, Mo., on "Mothers of Yesterday, To-day and To-morrow," "Women of the Past, the Present and the Future," and by Dr. Edwin S. Ricketts, of Cincinnati, Ohio, on "Obstruction of the Biliary Ducts in Women," were read by title.

Dr. Clinton Cushing, of Washington, D. C., read the next paper on the programme, which was entitled

CHOLECYSTECTOMY.

Dr. Cushing assumes that the gall-bladder is not necessary to the health or well-being of the individual;

that it performs no physiologic function. The indications for surgical operations on the gall-bladder are: (1) Recurring attacks of biliary colic, with or without jaundice, whether the gall-bladder is enlarged or not; (2) enlargement of the gall-bladder whether there be pain or not; (3) persistent jaundice, which is preceded or accompanied by pain in the region of the gall-bladder with or without paroxysms resembling ague; (4) empyema of the gall-bladder or peritonitis in the region of the gall-bladder: (5) abscesses in region of gall-bladder; (6) when the gall-bladder is seriously diseased, as it is better than having it as a place for further accumulation of gall-stones or as a point of new inflammations.

THE ANATOMY OF THE ROUND LIGAMENT.

DR. J. WESLEY BOVÉE, of Washington, D. C., read this paper by title.

SECOND DAY.

WHAT SHALL WE DO WITH THE UTERINE FIBROID?

DR. D. TOD GILLIAM, of Columbus, read this paper by title.

DR. HENRY P. INGRAHAM, of Buffalo, read a paper entitled

SPONTANEOUS RUPTURE OF THE BODY OF THE UTERUS DURING LABOR.

In investigating 48,000 cases of labor, 12 cases of ruptured uteruses had occurred, five of these being traumatic and seven spontaneous. Most of the cases occured in the practice of midwives. A large proportion of the cases occur among the foreign-born population. Many cases are unrecognized. The condition, however, is less frequent now than formerly, owing to the advances made in obstetric technic.

In the discussion which followed the paper, DR. GOFFE, of New York, said he thought many cases of uterine rupture were unreported. He reported a case in which death occurred without marked symptoms, in which the autopsy revealed complete rupture of the uterus, and also a unique case in which the uterus had been torn away by the vagina, it having been mistaken for the placenta and removed with the child.

DR. BALDWIN added four cases to the list of ruptured uteruses; in three of them death occurred.

DR. FITZGIBBON, of Milwaukee, in a paper entitled

UTERINE FIBROIDS,

discussed the varieties and position of these new growths. The purely myomatous tumor is rarely found. Various degenerative changes were described. The direct causation of these tumors is unknown. The colored race are very frequently affected. The symptoms were divided into (1) constitutional; (2) uterine; and (3) those due to pressure. Early diagnosis is sometimes difficult. Fibroids may be diagnosed as pregnancy, retained menses, flexions, malignant disease, subinvolution and inflammatory exudate, and these in turn may be mistaken for fibroid. Treatment may be non-surgical and surgical. Ergot is the best styptic, although hydrastis is often valuable, but the intra-uterine use of styptics is to be condemned. Electrolysis is not satisfactory. Surgical treatment is palliative, either the vaginal or abdominal route being used according to indications. Ligation of the uterine arteries and broad ligament is not advisable. Oöphorectomy has its uses in some cases. The intraperitoneal method of hemostasis is preferable. Myomectomy may be used in subserous fibroids. In section the abdominal incision should be made high to avoid injury of the bladder. Injury to the ureter is the greatest danger to be avoided. Three complicated cases were described in detail.

In discussion, DR. G. BETTON MASSEY, of Philadelphia, condemned the use of the term "electrolysis," meaning a chemical dissolution of the growth. He prefers the phrase "electricity applied by a careful technic." If results are not secured in a year let the case be turned over to the surgeon. The use of oxychloride of mercury at the seat of application is advocated. In hemorrhagic cases and small tumors he advocated the use of electric treatment.

DR. WM. H. WATHEN, of Louisville, Ky., condemns the extraperitoneal method of treating the stump in hysterectomy for fibroids, believing it to be unsurgical and unscientific. If the cervix is permitted to remain there is a possibility of degenerative changes in it. He believes electricity has no field in these cases and that it does untold harm. We should be conservative, but when the ordinary medical treatment fails, surgery should be employed. Myomectomy is the ideal method in these cases.

DR. T. A. REAMY, of Cincinnati, O., thinks that electricity has its uses. He has knowledge of 50 cases in which the symptoms have been relieved, and protests against a dogmatic condemnation of methods other than surgical.

DR. H. D. MARCY, of Boston, is thoroughly satisfied that electricity produces no material benefit. He had invited Apostoli to demonstrate his method in his hospital, and watched the results, which were unsatisfactory. The consensus of opinion in two continents is in favor of the surgical rather than the electrical method.

DR. ALBERT GOLDSPHON, of Chicago, believes that electricity relieves the pelvic hyperemia, and that this result can be obtained without the use of an electrode in the uterine cavity, or an invasion of the endometrium. The extra-uterine method of electrical application is the best. In hysterectomy he prefers complete removal of the uterus.

DR. JOSEPH R. EASTMAN, of Indianapolis, believes that the delay occasioned by using electricity is detrimental to the patient and that the surgeon is best qualified to decide which cases should be treated surgically and which electrically. The use of electricity is exceedingly limited. The selection of method is to be suited to the individual case.

DR. PALMER thinks that the treatment must be adapted to the individual case. A study of the history of the case must be made. The use of medicines is very unsatisfactory, but ergot and hydrastis are the two most useful drugs we possess for the condition. He considers Baer's operation the best to employ when operation is advisable. Curettement does good in many cases. He believes it will arrest the growth and diminish the size of the growths.

DR. J. WESLEY BOVÉE, of Washington, advised the application of any method that will relieve the individual case, and also directed attention to the danger of curettage in these cases, sepsis occurring afterwards.

DR. JOHN B. DEAVER, of Philadelphia, in his paper on

said that the frequency with which postpuerperal sepsis occurs even at the present time, with our knowledge of asepsis in surgery, calls for discussion. He reported a case of tubo-ovarian abscess with infection of the uterus following childbirth, in which the uterus, right tube and ovary, and left tube were removed. There are three forms of puerperal sepsis, from an anatomic standpoint, all of which are infectious and due to abrasion of the mucous membrane lining the cervical canal and uterus. They are endometritial, metritial and parametritial. The most fatal form is the metritial form. It is characterized by multiple fossa infection and abscesses. The endometritial is the most amenable to treatment, namely, curettement of retained decidua and thorough disinfection of uterine canal. The parametritial form is most frequently mistaken for so-called pelvic cellulitis. Puerperal sepsis is of two varieties: that due to putrefactive changes in the retained portions of the decidua or blood clots, and that which is the result of the introduction of micro-organisms by means of denuded endometrium, through the sinuses, or as the result of injury to the external genitals following the use of instruments during labor. Dr. Deaver believes that the conditions frequently described as cellulitis and abscess originated from sepsis carried into the tube and through the tube into the pelvis, where the inflammatory exudate breaks down and forms an abscess which is circumscribed by an adventitious membrane so closely resembling peritoneum that operators pronounce it as such, and regard the case as one of abscess of broad ligament. He believes the curette is resorted to too often. It is an instrument that requires as delicate manipulative skill to use with safety as the lithotrite, and should be handled with the greatest care and gentleness. Two cases were reported in which the uterus had been perforated with the curette. In one case examination revealed the presence of a loop of intestine in the vagina. Celiotomy was performed and six inches of small bowel was found, semi-gangrenous, and devoid of mesentery. The perforation in the uterus was about the size of a five-cent piece. Supravaginal amputation of the uterus with removal of the tubes was performed, the involved portion of the ileum resected, and end-to-end suture with needle and thread performed, the abdominal cavity thoroughly irrigated and drained, but death occurred from peritonitis on the evening of the fourth day. The treatment of septic endometritis was dealt with. Dr. Deaver prefers mercuric chloride and carbolic acid to lysol as an antiseptic. Several cases of pelvic abscess were described which illustrated the valuable point that the early institution of so-called radical measures is true conservatism in surgery.

In the discussion which followed the reading of Dr. Deaver's paper, Dr. Charles P. Noble, of Philadelphia, said that he believes that usually injuries to the uterus can be quickly and safely repaired, and prefers doing so to hysterectomy in cases of perforation.

Dr. B. Sherwood Dunn, of Boston, Mass., emphasizes the use and abuse of the uterine curette. He has seen two total hysterectomies as a direct result of the use of the curette. Curettement is a delicate operation and should be done with scrupulous and rigid aseptic precautions.

Dr. Henry T. Byford, of Chicago, Ill., advocates the use of the finger to guard the curette, or to remove retained secundines from the uterine cavity. Thorough curettage is necessary to remove adherent shreds.

Dr. Dorsett thinks that not one general practitioner in fifty should be allowed to use a curette. It requires as much skill as the most delicate operation in surgery. He advocates thorough cleansing and drying of the uterus and the insertion of a suppository of from 20 to 40 grains of iodoform, and the use of a gauze drain protruding into the vagina in cases of sepsis.

Dr. Henry thinks none but a bungling operator would perforate the uterus with a curette. He uses pure carbolic acid to swab out the uterus and no drainage.

Dr. Haggard believes that although the curette may be sterile, yet the endometrium is not, and a sharp curette disturbs the barrier nature has provided. The finger and the Bozeman dressing forceps for cleansing the uterus, and drainage, with irrigation with a 40-per-cent. solution of alcohol at frequent intervals, are useful. He does not believe that iodoform gauze drains effectually.

Dr. Paddock believes that physicians who do not know how to use the curette should not practise obstetrics. Irrigation should be practised prior to curettement. The finger is not long enough to reach the entire uterine surface. The dull and not the sharp curette should be used.

Dr. T. A. Reamy, of Cincinnati, uses a lithotomy forceps deprived of its teeth, for exploration.

Dr. Chauncey D. Palmer, of Cincinnati, believes the finger is totally unadapted for emptying the uterus at term. He uses the dull curette after all abortions or after parturition at term.

Dr. Duff believes the same result is obtained by all methods, and discussed the etiology of puerperal sepsis. Many cases are caused by placenta succenturiata and placenta spuria. Many cases are overlooked and all placentas should be carefully examined and the uterus explored for retained fragments.

At the afternoon session a symposium on

VAGINAL VERSUS ABDOMINAL SECTION

was held. A paper entitled

VAGINAL OR ABDOMINAL SECTION IN PELVIC SURGERY,

by Dr. M. V. Ball, of Philadelphia, was read by title.

THE ADVANTAGES OF VAGINAL SECTION IN THE SURGICAL TREATMENT OF PELVIC DISEASE IN WOMEN.

Dr. J. Riddle Goffe, of New York, read this paper. He believes that thorough and complete work can be done by the vagina. Celiotomy is a serious thing. The objections are (1) stitches; (2) adhesive plasters, which are annoying; (3) binder; (4) abdominal scar; (5) danger of ventral hernia. Great diversity of opinion exists in regard to the closure of abdominal incision. By vaginal incision is implied not simply puncture, but a free incision, transversely, if necessary, and supplemented by incision posterior to the cervix, giving ample room for manipulation. Vaginal fixation has many objections. Goffe prefers the vaginal shortening of the round

ligaments. He considers this the ideal treatment for retrodisplacements. No disadvantages during pregnancy occur and it is superior to suspensio uteri and the Alexander operation. The objections to the Alexander operation are many, because (1) of its limited applications; (2) ligaments are often absent or weak; (3) two unsightly scars are caused; (4) there is danger of hernia, which has frequently occurred subsequently. Retroversion is best treated by shortening of round ligaments through the vaginal incision. Diseased appendages may be removed, adhesions may be broken up, and malpositions corrected. Pelvic abscesses can be treated thoroughly, satisfactorily, and safely by vaginal incision. If both adnexa are destroyed total hysterectomy is indicated. The intestines may be injured, but this accident also occurs during abdominal operations, but less frequently in vaginal than in abdominal section. Ectopic gestation, ovarian dermoids, fibroid tumors of the uterus, may all be dealt with by the vagina. The pain is much less and the convalescence smoother than after celiotomy. The simplicity and facility and comfort of this method commend it to every operator.

TECHNIC OF SURGERY OF THE UTERUS AND ADNEXA PER VAGINAM.

DR. WILLIAM H. WATHEN, of Louisville, Ky., who read this paper, said he believes that many cases may be treated equally well either by vaginal or abdominal section. The bisection of the uterus increases the value of vaginal section. After the uterus is bisected, each half may be brought outside the vulva. He has never wounded ureter or intestine by the vaginal incision, but has been less fortunate in operating by the abdominal method. The adhesions above often prevent the prolapse of the intestine into the vaginal incision. There is less danger of infecting the peritoneum, or of post-operative sequels than in celiotomy. Too many instruments are generally employed in doing vaginal hysterectomy, which prevents perfect surgery. One retractor is sufficient. In early tubal pregnancy the ruptured tube may be removed by the vagina, unless the peritoneal cavity is filled with blood. Wathen has operated on 35 cases of ectopic pregnancy by this method without an untoward symptom. Post-operative septicemia may be treated and its further invasion prevented by vaginal incision and drainage.

A paper by DR. JOSEPH PRICE, of Philadelphia,

WHAT BECOMES OF THE PATIENTS AFTER VAGINAL CURETTAGE AND DRAINAGE?

was read by title, and DR. FERNAND HENROTIN, of Chicago, contributed a paper with the same caption. He advocated vaginal incision. The conditions for which it is now performed were detailed. It is adapted to women with capacious vaginas and thick, adipose abdominal walls, or in case of cardiac weakness. The post-operative symptoms are so slight that many patients cannot believe any serious operation has been performed. The objection has been offered that these operations are incomplete, yet he believes that the operation by the vagina is ideal and truly conservative of function. Pus may be either intraperitoneal or extraperitoneal, and most frequently secondary to pyosalpinx. Diseased tubes may be better removed through the suprapubic incision, although pus may be evacuated through the vagina and cure follow. Ovarian abscesses may be treated by the vagina without removal of the ovary. Results depend upon the discrimination and skill of the surgeon. About 25 per cent. to 30 per cent. of cases of pelvic disease may be advantageously operated on by the vagina.

In the discussion, DR. H. A. KELLY, of Baltimore, said he agreed with Dr. Henrotin's views on the subject of vaginal section. Opinions have been radically changed during the past few years. Segond had long before advocated these methods, which, at that time, we consider was operating in the dark. Dr. Kelly is an adherent of both methods, preferring the abdominal method in diseased conditions affecting the upper part of genital tract, that is, conservative operation on upper portion, and using the vaginal route for disease below. For pelvic abscess the vaginal route is the method *par excellence*, that is, in abscesses of ovaries and tubes, which are usually of gonorrheal origin. He gave statistics of 59 cases in patients from whom he had received letters, detailing the conditions a long time after operation. Of these, 39 were practically improved, showing very slight symptoms. Nine were still suffering some symptom. Four died, three from uremia, and from general infection. Some of these cases were operated on while in a critical condition. Many spoke of having only begun to improve six months or a year after operation, and several of the patients now well suffered greatly for the first months. Rectovaginal fistula occurred four times, the sac having ruptured into the rectum, and when puncture was done between rectum and vagina, became complete. Of these the fistula was healed in three cases and unhealed in one.

DR. JOSEPH R. EASTMAN, of Indianapolis, is an advocate of the vaginal method in selected cases. In fibroid tumors the operation will depend on position of growth, whether it is pedunculated or not and the character of pedicle. He prefers the Sims position in working by the vaginal route, as he considers certain advantages are gained thereby. Small ovarian cysts may be removed after tapping by this route. Both routes have advantages, and selection will depend on the individual operator.

DR. J. B. MURPHY, of Chicago, believes that the patient should be cured by one operation, if possible; that after incision of a gonorrheal pyosalpinx through the vagina, and after the incision has been healed, subsequent stricture of tube will interfere with drainage of the tube, and the patient will suffer from much discomfort later. In case of postpuerperal infection abscesses that form may be cured by vaginal infection. The pathology and origin of abscess must be considered. He should advocate the abdominal route for infection in cavities lined by epithelial cells, and the vaginal route for abscesses in the connective tissue.

DR. E. P. DAVIS, of Philadelphia, considers that the vaginal route is particularly useful when an abscess has formed. The uterus should be saved, if possible. He believes that the abdominal route is preferable in cases of gonorrheal infection.

DR. CHARLES P. NOBLE, of Philadelphia, thinks that vaginal puncture is an unfortunate term. A large incision should be employed and is indicated. Very seriously ill persons may be saved that certainly would die if celiotomy was performed. In many cases pregnancy will occur subsequently. In the majority of cases he employs the abdominal method. He believes

that the objection to the abdominal scar is very rare, as the style of women's dress has not changed so that it is necessary for this scar to be exhibited. Concealed hemorrhage may necessitate celiotomy to save patients after the vaginal incision. Many accidents to uterus, appendages or bladder may occur during the procedure.

Dr. C. A. L. Reed, of Cincinnati, said the value of such discussion is that it brings out the truth that these operations, formerly opposed, are but supplemental. A few years ago the edict came from England that all such conditions should be treated by the abdominal route. Then came from France, almost immediately, the word to attack all such by the vagina. We have since been able to recognize that perhaps there is a soul of truth in all things false, as well as a soul of good in all things evil. When to adopt one method and when the other is only to be determined clinically and upon the spot, and frequently after the initial steps in the operation have been taken. To presume to determine beforehand just what condition will be found and what procedure will be adopted presupposes a degree of diagnostic acumen which he does not claim to possess.

The following papers were read by title:

"Pelvic Inflammation," by Dr. O. Beverly Campbell, of St. Joseph, Mo.

"Lymphatics of the Peritoneum," by Dr. Byron Robinson, of Chicago, Ill.

"Surgical Significance of Certain Physiologic, Anatomic, and Pathologic Peculiarities of the Peritoneum," by Dr. H. D. Niles, of Salt Lake City, Utah.

Dr. Augustin H. Goelet, of New York, presented a paper on

TREATMENT OF ENDOMETRITIS BY DRAINAGE AND IRRIGATION,

in which he declared it was an error to regard every uterine discharge as evidence of endometritis and to treat such conditions by caustic and astringent applications which coagulate the discharge and defeat drainage by blocking the orifices of the glands. This and destructive curettage he designated unscientific. Hyperemia with hypersecretion, often mistaken for endometritis, reqires no local application to the endometrium, in fact is often converted into an endometritis by such treatment. The danger of inserting instruments into the uterus, either for the purpose of diagnosis, treatment, or for operations, when there is a so-called catarrhal endocervicitis, was pointed out. He declared that the staphylococci, streptococci and gonococci are often found in the cervical secretion when it is most inoffensive in appearance, and that their presence or absence can only be determined by microscopic examination of the discharge. He insists that this method of examination should always be employed in these cases before the cavity above the internal os is invaded, either for the purpose of diagnosis, treatment or operations within the uterus. In endometritis the disease is not confined to the surface, but has invaded the glandular structure beneath, and he believes the rational treatment is to free the orifices of the glands and drain them until the infective process is exhausted, at the same time employing repeated irrigation with some non-astringent, non-irritating solution to remove the expelled secretion from the surface and prevent migration of infective germs. This may be accomplished by a carefully executed curettage done in a manner not to destroy the mucosa, but merely for the purpose of removing projecting granulations upon the surface or superfluous tissue that may be blocking the orifices of the glands and preventing drainage. The dull curette with rigid shaft, he thinks, is sufficient, and the sharp curette should not be used upon the endometrium of the cavity in endometritis. It is both unnecessary and unwise to attempt to remove the entire mucous membrane, and caustic applications should not be used after curettage in these cases. They cause necrosis, and atrophy of the mucous membrane or agglutination of the sides of the cavity may result. He urges that curettage should only be regarded a preliminary step in the treatment and that more attention be given to the after-treatment, which he deems most important; this to consist of persistent drainage and irrigation until all evidence of disease, as revealed by microscopic examination of the secretion and inspection of the cavity by means of the uterine endoscope, has been effaced. He also urges endoscopic examination of the cavity, both before and after curettage; before, to decide the actual necessity therefor, and after, to determine the completeness or incompleteness of the work. In this way only may errors be avoided. He exhibited a uterine endoscope with a small electric lamp placed at the extremity of the tube for direct illumination of the interior of the uterus, after the plan of the Valentine urethroscope. A megaloscope is attached for bringing out more prominently the details of the surface.

Dr. W. Branham, of Baltimore, in a paper on

PAPILLOMA OF THE OVARIES, OMENTUM, AND UTERUS; OPERATION; RECOVERY,

reported a case in which the uterus, ovary and part of broad ligament were removed. Vaginal drainage was employed and recovery ensued. No recurrence had been noted. An interesting point was the presence of elevation of temperature as a symptom.

Dr. W. H. Humiston, of Cleveland, Ohio, read a paper on

CLINIC AND MICROSCOPIC DIFFERENTIATION OF SCLEROCYSTIC AND CIRRHOTIC DEGENERATION OF THE OVARIES AND CHRONIC OVARITIS.

He thinks the etiologic factor in these cases is unknown. The cirrhotic ovary is smaller than the normal, is hard and inelastic and deeply corrugated. The sclerocystic ovary is two or three times larger than normal and is globular rather than ovoid. The pathology, symptoms, diagnosis and treatment were discussed. Internal medication is very unsatisfactory, and Humiston knows of no way to relieve this class of patients except by castration. Much may be done for chronic ovaritis by general supervision and by gynecologic treatment. Pelvic massage and galvanism, with tampons soaked in ichthyol and glycerin carefully applied to exert a slight pressure, will in a few cases greatly increase the mobility of the adherent uterus and its adnexa and relieve to a great extent the dysmenorrhea and ovarian pain. Usually symptoms gradually decline after the menopause.

THIRD DAY.

Dr. H. D. Niles, of Salt Lake City, read a paper entitled

SURGICAL SIGNIFICANCE OF CERTAIN PHYSIOLOGIC, ANATOMIC AND PATHOLOGIC PECULIARITIES OF THE PERITONEUM.

He believes that free movement of the pelvic and abdominal viscera is absolutely essential to the healthful performance of their normal functions; that the very existence of pelvic and abdominal surgery, with all its possibilities for the saving of life and suffering, depends not upon ordinary surgical knowledge and skill, but upon the extraordinary inherent power of the peritoneum to repair injuries, oppose disease, and overcome infection. The methods by which the peritoneum exercises its protective functions are (*a*) exudative or reparative, (*b*) absorptive or eliminative, and (*c*) phagocytic. The local and general conditions that influence the protective and eliminative powers of the peritoneum warrant the following conclusions: (1) Lessened blood pressure encourages absorption and consequently favors phagocytosis; (2) a normal heart and healthy excretory organs capable of excessive functional activity are favorable factors in the elimination of the pathogenic germs; (3) the smaller the quantity the less the virulence, and the more general the distribution of the pathogenic bacteria the more likely the peritoneum is to dispose of them; (4) any *locus minoris resistentiæ* may retard or prevent absorption and encourage exudation and the formation of adhesions; (5) foreign bodies always act as irritants and produce adhesions; (6) all peritoneal adhesions retard absorption, first, by providing a convenient place for concealment of pyogenic bacteria, and secondly, by interfering with the normal mobility and functional activity of the peritoneum. Any interference with normal peristalsis is detrimental; (6) phagocytosis is vastly more effective when a large area of peritoneal surface is brought into contact with a diluted infection than when a limited area is compelled to oppose a more concentrated infection. Finally, the foregoing conclusions support the belief that pathogenic germs, regardless of their number or virulence, may always be safely disposed of, provided that the surgeon does his work promptly and completely and is able to secure conditions that are favorable for these natural agencies to exercise their full protective powers. Dr. Niles believes that peritonitis is always a surgical disease; that early operation should at all times be the one of choice; that complete surgery always promises more than incomplete surgery; that preparatory and after-treatment should include active and effective measures for the reduction of blood pressure and increase of the activity of the phagocytic, absorptive and eliminative functions, and that a small incision, with the least possible exposure in handling, complete removal of *débris*, avoidance of animal ligaments and sutures, perfect repair of the peritoneum, thorough flushing and no drainage, are all important factors in securing the co-operation of these natural agencies.

In discussion, DR. DORSETT said he thinks flushing of the abdomen often distributes sources of infection throughout the peritoneal cavity, and is to be avoided.

DR. HUMISTON thinks the chances of recovery are very much better after the completed operation. Gauze packing may be so placed that infection of general peritoneum may be prevented. He uses drainage very rarely.

DR. B. MERRILL RICKETTS finds that adhesions occur even after complete and ideal operations. They are frequently present without symptoms being produced. He advocates as short an incision as possible in celiotomy.

DR. HENRY irrigates the abdominal cavity very thoroughly after operations for purulent collections in the pelvis. Several gallons of sterile saline solution must be used. To be effective large quantities of fluid must be employed. As a rule drainage is not necessary, and many cases that were formerly drained we find do perfectly well without it.

DR. FREDERICK HOLME WIGGIN uses hydrogen peroxide and later saline solution for cleansing localized pus cavities. All raw surfaces should be covered and every effort taken to prevent adhesions. If a large quantity of the saline solution is left in the cavity, it mechanically prevents the agglutination of the intestines and lessens the danger of subsequent adhesions or intestinal obstructions.

DR. RUFUS B. HALL, of Cincinnati, in a paper entitled

MANAGEMENT OF PREGNANCY COMPLICATED WITH ABDOMINAL TUMORS,

discussed ovarian and uterine tumors during pregnancy. These cases occur frequently enough to excite the interest of the profession in this subject. In properly selected cases operation for these conditions is indicated during pregnancy. The danger of abortion following operation has been very much exaggerated. No definite rule can be formulated to determine which cases will or will not abort. Pregnancy favors the rapid growth of all uterine and most ovarian tumors. The pregnant woman is not in an ideal condition for operation. The responsibility of advising the patient is great. A case of pregnancy at four and a half months, complicated with an ovarian cyst and general peritonitis, was described. Operation was done, but patient died in a few days. Other illustrative cases were cited. When abortion occurs the danger to the patient is greatly increased. Women with fibroids rarely become pregnant, and the decision in regard to operation will depend entirely on the individual case. If possible, the patient should be tided over until the termination of pregnancy. The position of the tumor in uterine wall will determine the management of the case, as operation will almost always require sacrifice of the uterus and fetus.

In discussion, DR. ROSENWASSER advocated operations for ovarian tumors during pregnancy, but in fibroids the question is more difficult to decide. Sepsis and hemorrhage are apt to occur after labor in these instances. Many die of septicemia.

DR. HUMISTON, in small tumors without symptoms, waits for delivery. In myomas, particularly those involving the lower uterine segment, the only safe procedure is immediate operation as soon as recognized.

DR. RICKETTS related an instance of severe postpartum hemorrhage in a case of labor complicated with fibroid.

DR. MASSEY thinks that if a powerful faradic battery were at hand at the time of delivery, the danger of post-partum hemorrhage would be effectually and certainly obviated. He asserts that one second would be sufficient to stop the hemorrhage.

DR. CARSTENS thinks that pregnant women bear operation well. A patient who is conscious of the presence of a tumor, complicating pregnancy, is very

much depressed by its presence, and this is an additional argument for operation.

DR. DORSETT described a case in which the patient was successfully delivered in the knee-chest position. He thinks that the danger of rupture of the uterus would be very much increased by the use of the faradic current to control hemorrhage.

DR. C. P. NOBLE, of Philadelphia, thinks the good results are due to the fact that these patients are not septic. He advises operation in all cases of ovarian tumors complicating pregnancy, and related a case in which one patient had had two ovarian tumors removed in two pregnancies. Dermoid or adherent cysts, particularly, should be removed, as gangrenous cysts are very serious complications. In regard to fibroid growths, his attitude is more conservative, and the conditions must be exceptional and extreme if surgical interference is employed.

DR. HAGGARD related an interesting case of large adherent ovarian cyst successfully removed during pregnancy.

The following papers were read by title:

"Indications for Treatment in Tubal Rupture and Tubal Abortion Consequent upon Ectopic Gestation in the Tubes," by DR. GEORGE TUCKER HARRISON, of New York.

"Treatment of Ectopic Pregnancy at or near Full Term, the Child Living," by DR. L. H. DUNNING, of Indianapolis.

"Data Concerning Deformities in Fetuses of Extra-uterine Gestation," by DR. ANDREW F. CURRIER, of New York.

(*To be continued.*)

Recent Literature.

A Century of Vaccination and What It Teaches. By W. SCOTT TEBB, M.A., M.D. Second edition. London: Swan, Sonnenschein & Co. 1899.

The author of this book is one of the foremost exponents of the antivaccinationist party in England, a section of the population which, unfortunately, has increased in Great Britain.

The book is a sample of the illogical methods which have been put forth by the antivaccinationists from the times of Jenner down to the present day, since the great and convincing facts relating to vaccination are here persistently omitted, while the unimportant matters are highly magnified.

The following is an example from the introduction: "Right through the century there has existed a body of officials ostensibly paid to promote the practice of vaccination, but also, partly at least, paid to vindicate it theoretically, and to explain away its failures and its accompanying disasters. But for this State aid, vaccination would long ago have been consigned to the same limbo as has received a thousand other similar fads, which, fortunately for the public, have not secured official recognition and support."

This statement is sufficiently disproved by the example of the United States, where, until quite recently, vaccination has been practised almost exclusively by private physicians without State aid, and because of their unqualified confidence in the efficiency of their practice. They were only following in the footsteps of two great exemplars, the first American recipients of vaccine lymph from England, — Waterhouse in the North and President Jefferson in the South. The supposition that either of these men were acting from mercenary motives is preposterous.

The author's argument as to the possible conveyance of syphilis by vaccination is almost entirely drawn from an early period, before the introduction of bovine lymph, and hence has little weight at the present day.

His quotation in regard to the Montreal epidemic of small-pox in 1885 is incomplete, in that the fact that the mortality fell most heavily upon the unvaccinated French-Canadian population is kept out of sight.

Again the following statement in regard to vaccination in Germany (p. 235) is misleading. "It will thus be seen that, since the year 1834, there have been 7,505 cases and 291 deaths from small-pox in the German Army."

Now, the compulsory law in Germany, relating to the entire German population from which this great army is enlisted was not enacted till 1874, and from that day to the present there has been only one death from small-pox in the German Army.

Moreover the writer persistently ignores the most convincing argument in favor of vaccination, that is, the position of the entire German population in its comparative immunity from small-pox. Almost the only deaths which have occurred from this cause in Germany in the past quarter of a century are either those of foreigners who have crossed the border from partially vaccinated countries like Russia, Austria and France, after exposure at home, or of infants in the first year of life, who had been attacked before the legal age-limit for vaccination had expired.

It is refreshing to turn from such mischievous works as this volume to read the following declaration from the late Secretary of the Massachusetts State Board of Health, Dr. Geo. Derby.[1] It was written in 1871, and is as true at the present day as when first published.

"We may speculate about the potency of vaccine being exhausted in the human family, we may be surprised to find that people with good vaccine scars sometimes have small-pox, we may dispute as much as we please about the average period when re-vaccination may be considered a prudent safeguard . . . we may turn the vaccination question with ingenious skill, so that its many facets shall reflect a multitude of curious lights, and after all we find that we rest in a security against this most horrid pestilence unknown to former generations."

Laboratory Work in Bacteriology. By FREDERICK G. NOVY, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry of the University of Michigan. Second edition. Ann Arbor: George Wahr. 1899.

A Manual of Bacteriology. By HERBERT U. WILLIAMS, M.D., Professor of Pathology and Bacteriology, Medical Department of the University of Buffalo. Philadelphia: P. Blakiston, Son & Co. 1898.

Neither of these books deserves special notice. Their publication would seem to be due to the desire of these professors to provide a special text-book for their students. They are probably well adapted for this purpose, but they are inferior to other well-known works on bacteriology, and are not adapted for general use.

[1] Third Annual Report of Massachusetts State Board of Health, Jan., 1872, p. 302.

THE BOSTON

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THE TENTH ANNIVERSARY OF CLARK UNIVERSITY.

THE recent celebration of the tenth anniversary of the founding of Clark University at Worcester was rendered notable by the presence of a number of distinguished European scholars, among whom were three physicians to whom modern medical research owes much. These were Prof. Angelo Mosso, of the University of Turin, Prof. August Forel, of Zürich, and Prof. Santiago Ramón y Cajal, of Madrid. Each of them stands foremost in his special line of work, and those who were invited to attend their lectures must have come away with a deepened sense of the significance of research, both in its practical and theoretic aspects.

Mosso spoke on one of his favorite topics, namely, the relation of physical to mental development in the growing child. No doubt to many of his hearers his point of view seemed extreme in his insistence on the postponement of the rudiments of mental training to a relatively late period of the child's life, but no one could question the essential correctness of a theory which maintains the importance of a correct muscular training as a substratum for future mental development. It is an idea which is gradually, but surely, creeping into our educational systems, and one which is surely destined to result ultimately in increased mental efficiency.

Forel discussed certain phenomena of suggestion, and added the weight of his undisputed authority to the value of a mental treatment of a large class of ailments, a matter which all signs go to show must soon be taken up seriously and earnestly by the profession at large. We should cordially welcome all attempts made by men of broad training and scientific instincts toward a solution of what is sure to prove a therapeutic problem of great subtlety and extreme significance. As is well known, Forel has for many years been a recognized authority on "ants," as well as on man, and he also spoke at the meeting in question on certain of their habits and attributes.

About Ramón y Cajal centres a very peculiar and special interest. He represents a nation not noted for its medical scholars, and one to whom we have not in the past looked for scientific progress. He stands, therefore, almost alone among his people in his distinction of being the greatest living authority on many matters relating to the cerebral cortex. It is to him we owe the brilliant application of the Golgi method to the problems of nerve anatomy and a clear recognition of its significant implications, which have rendered possible our modern conception of the architecture of the nervous system. He spoke of his recent work on certain nerve cells.

At the conclusion of the series of lectures, which extended over several days, the honorary degree of LL.D. was conferred, among others, upon each of the physicians to whom we have alluded, a matter of added interest, inasmuch as the degree had not before been given by the University.

THE PRIVATE DISPENSARY.

THE establishment of a private free dispensary in Chicago has given rise to the query in certain quarters as to whether such an innovation is consistent with American ideas of medical education and medical charity. It is claimed that private dispensaries will tend merely to increase the abuses which already exist, and about which so much has of late been said and written. The more opportunities the poor are granted to have their ills cared for free of charge, the more will they avail themselves of the privileges offered, to the detriment of those physicians who would welcome a fee, however small. It may also with reason be said that any greater hospital privileges will tend to decrease still more that self-respect which is already lacking to an alarming degree among the lower classes in our large cities. Whatever else happens, it is the duty of physicians, as good citizens, not to pauperize the community for any personal reason. Apart, also, from any moral question involved, it may be said that we already have enough dispensaries and to spare, which are quite able to care in the best possible way for the deserving poor.

In view of these arguments, which surely should carry weight, it is of interest to see if there is any other side to the question. As we know, for many years private dispensaries have been established, and are recognized, throughout Germany, and in them much admirable teaching and brilliant research are done. These *polyclinics* are for the most part conducted by men of ability and enthusiasm, who have failed for some reason to attain a hospital connection. The clinics are unassuming in outward appearance and make no special inducements to patients beyond the reputation of their conductors. Evidently such dispensaries subserve a double purpose, first, as centres at which disease may be systematically studied, and, secondly, where teaching may be done, often to excellent advantage. These are both, certainly, entirely worthy motives.

To a man who is bent on clinical research, and who thinks, also, he has a mission as a teacher, it would appear unfair that he be completely cut off from his ambitions by the fact that he can find no place at one of the established hospitals or dispensaries. To our mind there is no inherent reason why a multiplication of dispensaries should be an evil, provided only the motives for their establishment are worthy, and a rigid watch be kept against the abuse of privileges by their patrons. The moment such dispensaries were carried on recklessly or for unworthy and mercenary ends we might expect that public opinion would quickly lead to their abolition. In the meantime, however, we see no reason to discourage any measures which are likely to lead to the more accurate study of disease, and to the dissemination of knowledge regarding it. We need certainly to keep before our minds the ideals which have been set us by Germany. In that case we permit ourselves to hope there would be small risk of abuse.

ENGLISH *VS.* AMERICAN ATHLETES.

It is of interest to note that in the recent athletic contest between the representatives of English and American universities, the Englishmen won those events which called for physical endurance, whereas the Americans were successful in the contests requiring special strength and skill, without prolonged muscular effort. In no case did the Americans win, or come very near winning, any of the long runs, whereas in short distances, the one-hundred-yard dash, for example, a supreme effort in the last few yards brought the American representative in ahead of his English competitor. The hurdle race also, requiring much skill, combined with temporary effort, was easily won by an American. The result of the longer runs might have been different, had the man upon whom the Americans depended not been somewhat out of condition, but the fact remains that the English athletes had an endurance which was entirely lacking in our men. Whether this resulted from different training or climatic conditions, or some more subtle cause, it is quite impossible to say, and certainly the data are as yet too few upon which to base conclusions. It is, however, to be hoped that this meeting, with a result so creditable to both sides, may be repeated each year alternately on this and on the other side of the Atlantic, and that an opportunity may thus be given, extending over a considerable period, of comparing methods of training and determining whether or not racial peculiarities or climatic differences underlie the rather striking outcome which we have had occasion to note this year. Some years ago a team of amateur English athletes visited this country, and were thoroughly beaten. On that occasion they encountered, in addition to their opponents, excessively hot weather, which no doubt was a factor in the result. It is generally recognized, moreover, that a visiting team is always at a disadvantage.

MEDICAL NOTES.

A Polyclinic in London. — A polyclinic has been established in London, which it is hoped will make the teaching facilities of that city more available than they have been in the past.

Yellow Fever Declining at Santiago. — It is gratifying to learn that the vigorous measures inaugurated by General Wood on his return have resulted in a rapid decline in yellow fever at Santiago, and the United States troops were reported free from it a week or more ago.

Hospitals as a Field for Christian Scientists. — We learn from the *Medical News* that in some inexplicable way a man who claimed to be a Christian Scientist, an "Eddyite" or "Divine Healer," and able to cure every disease afflicting the patients, got into Bellevue Hospital one day last week. He told the patients that the attendant physicians at the hospital were their worst enemies, and were merely experimenting on them for the benefit of the higher classes. The man had elaborately printed cards, on the back of which were crosses in red, and "P. J. Durvin, 285 Bowery," also the announcement that he and the Saviour were able to cure every manner of disease. Durvin succeeded in passing through several of the wards before he was interrupted. It is said that he then left the hospital by the "most direct route." The patients were all more or less excited over the visit.

The Microbe and the Passenger. — The Paris correspondent of the *Lancet* states that a Parisian who was lately travelling by train refused to show his ticket to a travelling inspector of the company. The passenger was accordingly summoned by the company for refusing to show his ticket, as he was bound to do by law. He argued, however, that he had not refused to show it (*présenter*), that he had let the inspector see it so that he could easily satisfy himself as to its being in order, but that he certainly had refused to let the ticket inspector take it into his hands because his hands were so dirty. He, the passenger, therefore, was unwilling to put into his pocket a ticket which would be contaminated with microbes and might very likely give him some disease. After a long legal discussion as to the exact meaning of the word "show" (*présenter*), the court fined the ardent disciple of modern hygiene the sum of one franc. — *Journal of the American Medical Association.*

The Cultivation of the Bacillus Lepræ. — At a recent meeting of the National Academy of Medicine of Bogota Dr. Carrasquilla asserted that he had successfully cultivated the bacillus lepræ on sloped solidified human serum and on beef bouillon prepared according to the method of Thoinot and Masselin. The bacillus was then cultivated from serum to serum, and from bouillon to bouillon, pure cultures being always obtained. Dr. Carrasquilla further states that he observed the bacillus in motion in two stages of its development — as long, slender

bacilli, which move in an undulatory manner; and as short, coarse, almost elliptical bodies moving rapidly in a straight line. In the latter he fancies he has observed flagella, but he is not positive as to this. His results do not entirely accord with those obtained by Professor Spronck, of Utrecht, who has also claimed to have cultivated Hansen's bacillus. Professor Campana, of Rome, has also convinced himself that he has successfully cultivated the bacillus leprae. These experiments require confirmation and extended observation before they can be accepted as absolute. — *British Medical Journal.*

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 26, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 48, scarlet fever 13, measles 34, typhoid fever 21.

TYPHOID EPIDEMIC TRACED TO MILK. — A small epidemic of typhoid fever, which has been traced to a milk route is reported in Jamaica Plain, Mass.

TWO MORE CASES OF TETANUS. — A boy of eleven years died at Woonsocket, R. I., on July 24th from tetanus, caused by a blank-cartridge wound received on July 1st. The ten-year-old son of Rev. G. H. Horton, of Blackstone, is ill with tetanus due to the same cause.

NEW YORK.

BEQUESTS TO HOSPITALS. — Martin H. Lehmaier, who died last month, bequeathed $2,500 to Mount Sinai Hospital for the founding of a bed in his memory. By the will of Daniel Krakauer $2,000 is left to Mount Sinai Hospital and $1,000 each to the Montefiore Home for Chronic Invalids and several other Hebrew charitable institutions.

A LARGE FEE FOR VISITS. — The newspapers report that a case is pending in the Supreme Court of Tompkins County, New York, in which Dr. H. L Robinson, of McLean, is suing G. E. Chambers, of the same village, for a bill of $10,000 for professional services consisting of ten visits during a recent illness. If the rest of the doctor's practice pays him these rates he ought to be able to keep the wolf from the door.

VACATION SCHOOLS POPULAR. — The second season of vacation work in the public schools of Manhattan and Bronx Boroughs was begun on July 18th, and the number of children applying for admission was much larger than could be accommodated, as the appropriation for the total expense is limited to $30,000. There are ten schools, divided into kindergarten, primary, grammar, art and industrial schools, with three hours' daily sessions. For the girls there are practical courses in domestic economy, cooking, housecleaning, dressmaking, nursing and the hygiene of the sick-room, and for the boys, in various branches of mechanical industry. The indoor gymnasiums used last year have been supplemented this year with five outdoor gymnasiums, and other features that have been added this season are swimming lessons in the city's free baths and sketching classes in the parks. The vacation-school system has this year been introduced for the first time in Brooklyn, and there are now six schools in operation there under the direction of the Borough School Board.

A CASE OF ACROMEGALIA. — A remarkable case of acromegalia, said to be the first one of that disease recorded at the institution, was received in Bellevue Hospital on July 20th. The patient was an elderly woman six feet in height, and her head, nose and extremities were enormously enlarged, while a heavy gray moustache and beard gave her a most formidable appearance. She was in a state of exhaustion when admitted, and died on the following day.

WOMEN NURSES START FOR THE PHILLIPINES. — Nine women nurses, six of them graduates of New York training schools, and the others graduates of schools in Boston and New Haven, started for the Philippines on July 20th. They were sent in response to an appeal for more nurses recently cabled from Manila, and went under the auspices of a ladies' organization for the maintenance of trained nurses formed during the recent war. At Manila they will report to Miss Henshall, who is at the head of the eighteen trained nurses already sent out by the same society.

THE BABIES' HOSPITAL, SEASIDE BRANCH. — The new building of the seaside branch of the Babies' Hospital, an adjunct of the Post-Graduate Medical School and Hospital, was opened at Oceanic, N. J., on July 21st. A special feature of it is accommodations for pay patients, where the infants of well-to-do parents may be sent for treatment.

THE HARPER PAVILION. — The new wing of the Monmouth Memorial Hospital, at Long Branch, N. J., which has been erected at a cost of $10,000 and is to be known as the Harper Pavilion, was dedicated with appropriate ceremonies on July 18th.

MORE DEATHS FROM TETANUS. — During the week ending July 22d there were reported two deaths from tetanus, the result of Fourth of July accidents, in New York, and one each in Yonkers, Syracuse, Paterson, N. J., Elizabeth, N. J., and Passaic, N. J. In all the cases except one it is stated that antitoxin serum was employed. The deaths in Yonkers and Passaic were both in patients which last week were reported as improved under the serum treatment. Four deaths in all have occurred at Yonkers and three at Syracuse.

ARMY NOTES.

THE ARMY RATION. — Dr. L. L. Seaman, of New York, late surgeon of the First Regiment, U. S. Volunteer Engineers, who is now on a visit to the Philippines in a semi-official capacity, has offered, through the Military Service Institution of the United States, a prize of $100, or a gold medal of that value,

if preferred, for the best essay on "The Ideal Ration for an Army in the Tropics." The Executive Council of the Military Service Institution, at a meeting recently held at its headquarters on Governor's Island, adopted a resolution of thanks to Dr. Seaman and decided that all essays offered in competition should be submitted by March 1, 1900, to a committee of award consisting of Colonel Weston, Acting Commissary-General, Lieut.-Col. Charles Smart, Deputy Surgeon-General, and Lieutenant-Colonel Dougherty, Seventh U. S. Infantry.

Care of Orphans in Cuba. — Miss Clara Barton, President of the National Red Cross Society, who arrived from Havana on July 20th, reports that during the past three months the Society has organized in Cuba twelve asylums for reconcentrado orphans, in which there are now accommodated about twelve hundred children of from three to fifteen years of age.

Transportation of the Wounded in the Philippines, Health of the Troops, etc. — In a report just received from Manila covering the month of May, the movements of the medical department attached to the 2d Division, 8th Army Corps, are detailed by Major Henry F. Hoyt, chief surgeon of that division. As the movements north of the Rio Grande River were along the line of the railroad, hand-cars were found to be of much service in the transportation of hospital supplies and wounded. In anticipation of the fight of May 3d, four ambulances were taken across the river on a raft, the bridge having been destroyed. These ambulances were of great value in the action which commenced at about the time of their arrival. The wounded were brought by them to the railroad and transported on hand-cars to the broken railroad bridge, where they were transferred to litters, ferried across the river on two cascoes lashed together, and were again placed on the hand-cars. The hospital-corps men suffered considerably from heat and exhaustion, and Filipino prisoners were impressed to propel the hand-cars. At Bagbag the wounded were transferred to steam-cars and sent into Manila. On May 6th the remaining ambulances succeeded in crossing the river and a temporary hospital was established in several large houses in San Fernando. On May 12th Major Hoyt made an inspection of the troops of the command and found them much exhausted and debilitated by the hardships of the campaign in which they had engaged. Diarrheal troubles appeared to be on the increase in the command, and regulations were issued providing for the restriction of the purchase and use of fruits by the men. In response to a request for suggestions as to improvement in the existing ration, Major Hoyt advised that a daily issue of six ounces of rice per man be authorized and that its use be encouraged by company officers. Instead of canned corned beef, which he said was universally condemned during the present campaign, he advised the use of a sausage containing five parts of beef and one of pork and the issue of a canned vegetable soup in lieu of the allowance of beans. On the 24th an engagement west of San Fernando took place, the wounded being sent in on ambulances, cared for at the hospital and shipped to Manila by train. On the 25th five buildings were selected in San Fernando and a division field hospital established therein, the first in the Philippine war. It had a capacity at the outset of 200 beds, Major Guy L. Edie being assigned in charge. At the end of the month the troops were found debilitated and exhausted from the hardships which they had undergone and it was noticed that recuperation seemed to be slow. During the month, in the seven regiments composing the division, the casualties were six killed and 52 wounded, or a mortality of ten per cent. in the total number of hits. With this division there were serving 27 medical officers, 19 hospital stewards, 17 acting hospital stewards, 110 privates of the hospital corps, 9 ambulances and 78 coolie litter-bearers. With regard to the latter, Major Hoyt says, that as litter-bearers they are very satisfactory but do not prove efficient workers in connection with the hospitals. Their employment in the field is of much assistance, since it leaves the trained man of the hospital corps free for other more important duties.

Hospital Ships and Army Transports. — The hospital ship *Missouri* is now at Brooklyn, undergoing extensive repairs and alterations preparatory to her voyage to Manila, where she will hereafter be stationed. The trip will be made *via* the Suez Canal and the ship is expected to be in readiness to start about August 20th. The medical department in the Philippines will be well supplied with floating-hospital facilities on her arrival. The *Missouri* and *Relief* together have ample accommodations for more than 500 patients. Each army transport possesses a well-appointed hospital of a size proportionate to the carrying capacity of the ship, and returning transports carrying no troops have been found of excellent service, after special preparation, in the transfer of convalescent patients to the United States.

Miscellany.

THE SEXUAL DIFFERENCES OF THE FETAL PELVIS.

While the existence of structual differences between the pelves of the male and female adult has long been recognized, the source and method of production of these differences are problems which have occupied the attention of many generations of obstetricians and anatomists. It has generally been assumed that the characteristic features of the female pelvis do not take shape until the period of puberty, and an immense amount of ingenuity has been expended in providing hypothetical explanations of the change. Matthews Duncan, for example, held that the special features of the male pelvis were due to the

bones being thicker, stronger, and stouter than in the female, a further factor being their supposed earlier consolidation with each other. This, however, is more of the nature of a statement of appearances than an explanation of their causation, and this observer's theory of the action of natural, that is, muscular, forces, falls to the ground in view of the fact that such forces must act similarly if not quite to the same extent, in both sexes. The obscurity which has hitherto surrounded the production of these differences has to a large extent been cleared away by the painstaking investigations of Professor Thomson, of Oxford, who, in a demonstration at the last meeting of the Obstetrical Society, showed clearly enough, by the aid of numerous beautiful specimens of fetal pelves, that the distinguishing features which serve to identify the pelvis of the male and female respectively are quite well marked as early as the third month of intra-uterine life. It is highly probable, and by no means inconsistent with biology, that these differences exist *ab initio*, though this obviously cannot be affirmed, owing to the fact that at an earlier date the identification of sex is not possible. None, however, can doubt that a fetus is male or female from the very b ginning, though evidence thereof is not as yet available, and it follows that if we could only check the observations the same differences would probably be met with coincidently with the formation of the pelvis as a definite structure. This important contribution marks an epoch in our knowledge of the development of the fetus and will greatly simplify the proper comprehension of the subject. — *Medical Press and Circular.*

A NEW PATHOGENIC MICROBE OF SEWAGE.

THE following account of a new pathogenic microbe, which has been isolated by Dr. E. Klein, and named by him the *Bacillus Pyogenes Cloacinus*, is given in the *British Medical Journal* for July 8th:

This microbe was isolated in pure culture from the purulent peritoneal and pleural exudations of a guinea-pig that died forty-eight hours after subcutaneous injection of a small amount of the deposit of fresh sewage; also from the subcutaneous abscess of this and the companion guinea-pig injected at the same time. The above purulent exudations, as also the pus of the abscess, were crowded with the microbe, either free in the fluid or enclosed in groups within the substance of the pus cells.

The microbe is a minute bacillus, the average length varying between 0.6μ and 1.25μ (few are longer), cylindrical, and in chains; its thickness is about 0.4μ. It is non-motile and stains slightly in Gram.

In gelatine plates kept at 20° to 21° C. the first traces of growth show themselves after forty-eight hours in the form of gray translucent round dots; these enlarge slowly, forming circular flat discs, slightly thicker in the centre than at the margin.

In gelatine streak the growth is gray, translucent; when growth is complete, say, after two to three weeks, it shows under a magnifying glass a thicker knobby centre and a thin translucent margin.

In gelatine stab the track of the needle becomes marked as a thin whitish line, which under a magnifying glass is seen composed of closely-placed minute droplets; on the surface of the stab a circumscribed flat gray expansion is just noticeable with the unaided eye. The gelatine is not liquefied after weeks and months. On the agar surface the colonies are translucent gray, moist, viscid discs; in agar streak translucent gray, viscid bands; in agar stab (37 C.) the growth is like that in gelatine stab, except that at the surface of the stab there is a circular, distinct, plate-like expansion of the growth.

In alkaline beef broth kept at 37° C. the growth is rapid; the broth is slightly turbid already after twenty-four hours, but after several days the broth clears and shows numerous fine granules along the sides and a powdery precipitate at the bottom of the tube. The broth, even after growth is completed, has a distinctly alkaline reaction; no indol is produced. The microbe grows well in litmus milk and in milk without altering either the litmus or the fluid condition, reaction, and aspect of the milk.

In shake culture in ordinary gelatine or in grape sugar gelatine it produces no gas; it grows very feebly in the depth of the gelatine. On potato no growth is visible or demonstrable by microscopic specimens. The microbe does not grow on acid media, and in fluid media distinctly produces alkali. Neither the pus of the abscess nor the purulent exudations, nor any of the cultures, have any smell.

The microbe, when injected in minute doses, is pathogenic. Small doses — even a portion of one colony — cause disease in the guinea-pig. When injected subcutaneously into the groin, in the majority of instances only a local abscess is the result; this commences as a small tumor a day or two after the injection; this enlarges, and soon becomes changed in the course of two or three days into an abscess, from the size of a bean to that of a hazel nut, filled with creamy thick pus. Under the microscope the fluid contains an abundance of the bacilli as single individuals, or more frequently as dumb-bells; some few are cylindrical and some in chains. Many of the pus cells contain the bacilli, occasionally their protoplasm being packed with the bacilli. Some pus cells are greatly swollen by the number of bacilli, and eventually disintegrate, so that the groups and clumps of the bacilli become free. In a large minority of instances, however, the result of subcutaneous injection is, besides the local abscess, general disease, ending fatally in three to four days.

When the result of inoculation is a local abscess only, no bacilli can be found in the blood, but when it is a general purulent inflammation of the serous membranes, the blood of the heart and of the viscera, spleen particularly, contains an abundance of the microbe.

Injection of minute doses into the peritoneal cavity of guinea-pigs leads to fatal result within twenty to twenty-four hours. On post-mortem examination purulent peritonitis, with pyogenic membranes on the liver, spleen, diaphragm and kidney, and inflammation of the small intestine, occasionally pleural and pericardial exudation, are also present.

In the mouse subcutaneous injection of the culture in small doses causes general septicemic infection, the blood of the heart and of the viscera teeming with the microbe, the viscera of the abdomen and thorax being greatly congested.

In the rabbit no pathogenic effect is produced.

From these observations, both as to cultural characters and as to the result of animal experiments, it is clear that the microbe is distinct from Passet's bacillus pyogenes fetidus, as also from Bolton's bacillus pyogenes soli. Culturally it resembles, to a certain extent, the bacillus suisepticus (German *Schweineseuche*) of Löffler and Schütz, but the action of this latter on rodents is altogether of a different nature from that described above of our microbe. On account of its derivation from sewage and its conspicuous pyogenic action, Klein proposes for it the name "bacillus pyogenes cloacinus."

THERAPEUTIC NOTES.

DR. KARL HEXHEIMER treated twenty-eight cases of psoriasis with intravenous injections of arsenic, and obtained cures even in cases in which no local treatment was applied. The cure was usually evident by

the end of the second or the beginning of the third week, by which time the papules became darker, and the crusts diminished, when finally the pigmentation would disappear altogether. The average duration of the treatment was about forty-eight days. The initial dose of the arsenious acid was $\frac{1}{10}$ grain, which was increased daily by $\frac{1}{10}$ until $\frac{1}{5}$ grain was reached, this last remaining until the final disappearance of the efflorescence. The injections were mostly made into the elbow-joints, the forearm being compressed with an Esmarch bandage, which made the veins very prominent. To prevent any recurrence, the author recommends intermittent treatment, similar to what is done in syphilis, during the periods free from symptoms.[1] We think, however, that the dose of arsenic is much too large.

FOR SPASMODIC CROUP:[2]

℞ Nitroglycerin . . . . . gttm 1-10-1-15
Spir. vini gallici . . . . . ʒiv
M. Et sig. Two to five drops every two to three hours in some sweetened water.

FOR VOMITING OF SEA-SICKNESS:[3]

℞ Menthol . . . . . gr. ii
Cocainæ hydrochl. . . . . gr. iii
Syr. simpl. . . . . ʒi
Spir. vini rectif . . . . . ʒii
M. Et sig. A teaspoonful every hour.

[1] St. Peter. med. Woch., 48, 1898.
[2] Centrbl. f. Ther., November, 1898.
[3] Bull. Méd.

Obituary.

RUSSELL STURGIS, JR., M.D.

DR. RUSSELL STURGIS was born on December 16, 1856. He was prepared for college at St. Paul's School, Concord, N. H., and received the degree of A.B. as a member of the class of 1878, Harvard College. He took the degree of M.D. (Harvard) in 1881. On March 30, 1880, he was married to Anne Outram Bangs.

In the latter part of May Dr. Sturgis was taken with typhoid fever in a severe form. He did well, however, for the first two or three weeks, when an extensive infarction of the right lung occurred. From this time he grew gradually weaker, though an occasional rally gave ground for hope. He finally succumbed on July 17th, after an illness which he bore with great fortitude. Mrs. Sturgis, a son and six daughters survive him.

Dr. Sturgis's death was a profound shock to a wide circle of patients and friends. He was loyal, devoted, warm-hearted and self-sacrificing. These qualities, which won the respect, gratitude and affection of all who knew him, are now recalled with a sharp sense of personal bereavement.

The professional labors of Dr. Sturgis were at first devoted more especially to the diseases of children. Later he became interested in nervous diseases and the phenomena of hypnotism. After considerable experience in those nervous diseases marked by a "fixed idea" he published a paper of great interest and importance on "The Use of Hypnotism to the First Degree as a Means of Modifying or Completely Eliminating a Fixed Idea." This contribution contained original and valuable observations, which attracted wide notice. His success in the personal treatment of these obstinate cases led to the publication in 1899 of a second paper on the same subject. The methods used by Dr. Sturgis were painstaking; the cases themselves were from their nature trying; his results were often brilliant. It is a matter of deep regret that the work so auspiciously begun, so full of promise for future development, should have been thus early interrupted.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 20, 1899.

BAILHACHE, PRESTON H., surgeon. To proceed to New York, N. Y., for special temporary duty in the Purveying Depot. July 20, 1899.

BANKS, C. E., surgeon. Relieved from duty at Washington, D. C., and detailed as medical purveyor of the Service at New York, N. Y. July 17, 1899.

GEDDINGS, H. D., passed assistant surgeon. To proceed to New York, N. Y., for special temporary duty. July 15, 1899.

ROSENAU, M. J., passed assistant surgeon. Detailed as inspecting quarantine officer for the island of Cuba. July 19, 1899.

FRICKS, L. D., assistant surgeon. To proceed to the Brunswick Quarantine Station, Brunswick, Ga., for special temporary duty. July 18, 1899.

MCADAM, W. R., assistant surgeon. Granted seven days' extension of leave of absence. July 18, 1899.

RICHARDSON, T. F., assistant surgeon. Relieved from duty at the Immigration Depot, New York, N. Y., and directed to proceed to Cienfuegos, Cuba, for temporary duty. July 17, 1899.

THORNBURY, F. J., assistant surgeon. To proceed to Point Pleasant, N. J., for special temporary duty. July 18, 1899.

BURFORD, R. E. L., sanitary inspector. Granted leave of absence for seven days. July 18, 1899.

APPOINTMENT.

ALANSON WEEKS, of Michigan, to be acting assistant surgeon, for duty at the port of Chicago, Ill. July 13, 1899.

RECENT DEATHS.

CYRUS N. CHAMBERLAIN, M.D., M.M.S.S., died at Jamaica Plain on July 18th, at the age of seventy years. He was an active and efficient surgeon in the U. S. Army during the Civil War and organized a general hospital at Gettysburg after the battle, and the Dale General Hospital at Worcester, Mass. He retired from the army in 1865 with the rank of lieutenant-colonel, received for meritorious service. In 1865 he went to Lawrence, Mass., where he built up a large practice. He has been a councillor of the Massachusetts Medical Society and was twice president of the Essex North District Medical Society. He was visiting physician and later consulting physician to the Lawrence Hospital. He retired from practice and went to Andover to live a few years ago. His death ended an active and useful professional career.

JAMES S. GEARY, M.D., for two years a coroner's physician in the Borough of the Bronx, died at the age of thirty, on July 17th, of pulmonary tuberculosis. He was educated at St. John's College, Fordham, and graduated from Bellevue Hospital Medical College in 1892, and he afterwards served on the house staff of St. Francis' Hospital.

J. WILLIAM NIEDECKER, M.D., of Brooklyn, died suddenly of apoplexy, on July 17th, at the age of thirty-eight. He was born in Cleveland, O., and was a graduate of the Columbus Medical College and the Long Island College Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of North Carolina, Forty-fifth Annual Meeting, held at Charlotte, N. C., May 3, 4 and 5, 1898.

Addresses and Papers by the Members of the Instructing Staff of the New York State Veterinary College for the years 1896-98. Ithaca, N. Y. 1898.

The Serum Diagnosis of Disease. By Richard C. Cabot, M.D., Physician to Out-patients, Massachusetts General Hospital. New York: William Wood & Co. 1899.

Essays for Students. By Stephen Paget, F.R.C.S., Surgeon to the West London Hospital; Surgeon to the Ear and Throat Department of the Middlesex Hospital. New York: William Wood & Co. 1899.

Transactions of the New York State Medical Association for the year 1898. Volume XV. Edited for the Association by M. C. O'Brien, M.D., of New York County. New York City: Published by the Association.

Elementary Physiology. By Benjamin Moore, M.A., Professor of Physiology in the Medical Department of Yale University, etc. With 125 illustrations. New York, London and Bombay: Longmans, Green & Co. 1899.

Golden Rules of Gynæcology. By S. Jervois Aarons, M.D., Registrar to the Hospital for Women, Soho, etc. "Golden Rules" Series, No. II. Bristol: John Wright & Co. Loudon: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1898.

Our Baby: for Mothers and Nurses. By Mrs. Langton Herver, Diplomée Obstetrical Society, London; late Hospital Ward Sister; author of "Antiseptics: a Hand-book for Nurses." Sixth edition, revised. Bristol: John Wright & Co. 1899.

Respiratory Exercises in the Treatment of Diseases, Notably of the Heart, Lungs, Nervous and Digestive Systems. By Harry Campbell, M.D., B.S. (Lond.), Fellow of the Royal College of Physicians, London, etc. New York: William Wood & Co. 1899.

The Treatment of Disease by Physical Methods. By Thomas Stretch Dowse, M.D. (Abd.), F.R.C.P. (Edin.), formerly Physician-Superintendent, Central London Sick Asylum; President North London Medical Society, etc. New York: E. B. Treat & Co. 1899.

Surgical Nursing. By Bertha M. Voswinkel, Graduate of Episcopal Hospital, Philadelphia; late Nurse-in-charge of Children's Hospital, Columbus, O. Second edition, revised and enlarged, with 112 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

On the Study of the Hand for Indication of Local and General Disease. By Edward Blake, M.D., M.R.C.S., Life Associate, Sanitary Institute Great Britain; Foundation Fellow British Gynecological Society, etc. Second edition. London: Henry J. Glaisher. 1899.

Cyclopedia of the Diseases of Children, Medical and Surgical. The articles written especially for the work by American, British and Canadian authors. Vol. V, Supplement. Edited by William A. Edwards, M.D. Illustrated. Philadelphia: J. B. Lippincott Co. 1899.

American Association for the Advancement of Science: Preliminary Announcement of the Forty-eighth Annual Meeting to be held at Columbus, O., August 21 to 26, 1899, and of the meetings of Several Affiliated Scientific Societies that will hold their Sessions in Columbus. 1899.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, etc. Edited by Judson Deland, M.D., J. Mitchell Bruce, M.D., F.R.C.P., and David W. Finlay, M.D., F.R.C.P. Volume IV. Eighth series. 1899. Philadelphia: J. B. Lippincott Co. 1899.

Three Practical Points in the Management of Fractures at the Elbow-joint. I. General Considerations upon Major Anesthesia. II. Threatened Death during Major Anesthesia. III. A Brief Digression upon Shock. Shock. By Robert H. M. Dawbarn, M.D., New York. Reprints. 1897-99.

Twentieth Century Practice, an International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Vol. XVI. Infectious Diseases. New York: William Wood & Co. 1899.

The Influence of Character and Right Judgment in Medicine: The Harveian Oration delivered before the Royal College of Physicians, October 18, 1898. By Sir Dyce Duckworth, M.D., LL.D., Fellow and Treasurer of the College, etc. New York and Bombay: Longmans, Green & Co. 1898.

A Compend of Human Physiology, Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, A.M., M.D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College, etc. Ninth edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

Thirtieth Annual Report Relating to the Registry and Returns of Births, Marriages and Deaths in Michigan for the year 1898. By the Secretary of State of Michigan. Edited by Cressy L. Wilbur, M.D., Chief of the Division of Vital Statistics. By authority, Lansing: Printed by the State. 1898.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S. (Edin.), Consulting Surgeon to the Royal Infirmary and to the Royal Edinburgh Hospital for Sick Children. Fifth edition, thoroughly revised. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1899.

Treatise on Human Physiology, for the use of Students and Practitioners of Medicine. By Henry C. Chapman, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in Jefferson Medical College, Philadelphia, etc. Second edition, illustrated with 595 engravings. Philadelphia: Lea Brothers & Co. 1899.

The Newer Remedies: A Reference Manual for Physicians, Pharmacists and Students. By Virgil Coblentz, A.M., Phar.M., Ph.D., F.C.S., etc. Professor of Chemistry and Physics in the New York College of Pharmacy, etc. Third edition, revised and very much enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

A Treatise on Fractures and Dislocations, for Practitioners and Students. By Lewis A. Stimson, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York. In one octavo volume of 823 pages, with 321 engravings and 20 full-page plates. Philadelphia and New York: Lea Brothers & Co. 1899.

An Experimental Research into Surgical Shock. An essay awarded the Cartwright Prize for 1897. By George W. Crile, A.M., M.D., Ph.D., Professor of the Principles of Surgery and Applied Anatomy in the Cleveland College of Physicians and Surgeons, etc. One hundred and sixty pages. Philadelphia: J. B. Lippincott Co.

The Philosophy of Memory and Other Essays, Consisting of articles on the Philosophy of Emphasis; The Functions of the Fluid Wedge; The Birth of a Planet; The Laws of Riverflow. By D. T. Smith, M.D., Lecturer on Medical Jurisprudence in the University of Louisville. Louisville, Ky.: Press of John P. Morton & Co. 1898.

Golden Rules of Surgical Practice. By E. Hurry Fenwick, F.R.C.S., Surgeon to and Lecturer on Clinical Surgery at the London Hospital, etc. "Golden Rules" Series, No. I. Fifth edition, revised and enlarged. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Hirschfeld Bros. 1898.

Diagnosis by the Urine, or the Practical Examination of Urine, with Special Reference to Diagnosis. By Allard Memminger, M.D., Professor of Chemistry, Urinology and Hygiene in the Medical College of the State of South Carolina, etc. Second edition, enlarged and revised, with illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Railway Surgery: A Hand-book on the Management of Injuries. By Clinton B. Herrick, M.D., Troy, N. Y., Lecturer on Clinical Surgery, Albany Medical College; Attending Surgeon to the Troy Hospital and to the House of the Good Shepherd, etc. Profusely illustrated by numerous original engravings. New York: Wm. Wood & Co. 1899.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D., Physician to the West End Hospital for Diseases of the Nervous System, London; Examiner in Medicine to the University of Glasgow; formerly Medical Superintendent of the Paddington Infirmary and Assistant Physician to the West London Hospital, etc. London: Henry J. Glaisher. 1899.

On Varix: Its Causes and Treatment, with Especial Reference to Thrombosis. An address delivered at the inaugural meeting of the Nottingham Medico-Chirurgical Society, Session 1898-99. By William H. Bennett, F.R.C.S. (Eng.), Surgeon to St. George's Hospital and Joint Lecturer on Surgery at the Medical School, etc. New York and Bombay: Longmans, Green & Co. 1899.

An American Text-book of Diseases of the Eye, Ear, Nose and Throat. Edited by G. E. de Schweinitz, A. M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia, etc., and B. Alex. Randall, M.A., M.D., Ph.D., Clinical Professor of Diseases of the Ear in the University of Pennsylvania, etc. Illustrated with 766 engravings. Philadelphia: W. B. Saunders. 1899.

Fever Nursing, designed for the Use of Professional and Other Nurses, and Especially as a Text-book for Nurses in Training. By J. C. Wilson, A.M., M.D., Author of "A Treatise on the Continued Fevers," Visiting Physician to the Hospital of the Jefferson College and the Pennsylvania Hospital, etc. Third edition, revised and enlarged. Philadelphia and London: J. B. Lippincott Co. 1899.

An Essay on the Nature and the Consequences of Anomalies of Refraction. By F. C. Donders, M.D., late Professor of Physiology and Ophthalmology in the University of Utrecht. Revised and edited by Charles A. Oliver, A.M., M.D. (Univ. Pa.), one of the Attending Surgeons to the Wills Eye Hospital, etc. With portrait and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Practical Materia Medica for Nurses, with an Appendix containing Poisons and their Antidotes, with Poison-emergencies; Mineral Waters; Weights and Measures; Dose-list, and a Glossary of the Terms used in Materia Medica and Therapeutics. By Emily A. M. Stoney, Graduate of the Training School for Nurses, Lawrence, Mass.; late Head-nurse, Mercy Hospital, Chicago, Ill., etc. Philadelphia: W. B. Saunders. 1899.

A Hand-book of Obstetric Nursing, for Nurses, Students and Mothers, comprising the Course of Introduction in Obstetric Nursing given to the Pupils of the Training School for Nurses connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M.D., Obstetrician, Gynecologist and Surgeon to the Woman's Hospital of Philadelphia, etc. Fifth revised edition, illustrated. Philadelphia: P. Blakiston, Son & Co. 1899.

Clinical Diagnosis: The Bacteriological, Chemical and Microscopical Evidence of Diseases. By Dr. Rudolf von Jaksch, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the German University of Prague. Specially revised and enlarged by the author from the third English edition of the translation by James Cagney, M.A., M.D. Fourth edition. With numerous illustrations, partly in colors. London: Charles Griffin & Co., Limited. Philadelphia: J. B. Lippincott Co. 1899.

Atlas of Diseases of the Skin, including an Epitome of Pathology and Treatment. By Prof. Dr. Frantz Mracek, of Vienna. Authorized translation from the German. Edited by Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology, Jefferson Medical College, Philadelphia; Physician to the Department for Skin Diseases, Howard Hospital; Dermatologist to the Philadelphia Hospital, etc. With 63 colored plates and 39 full-page half-tone illustrations. Philadelphia: W. B. Saunders. 1899.

Original Articles.

THE TREATMENT OF THE ACUTE DIARRHEAS OF INFANCY.

BY JOHN LOVETT MORSE, A.M., M.D., BOSTON,
Assistant Visiting Physician at the City Hospital and Assistant Physician at the Infants' Hospital, Boston; Assistant in Clinical Medicine at the Harvard Medical School.

THE acute diarrheas of infancy may be divided, on the basis of etiology, into two main classes: those of nervous origin and those due to the action of micro-organisms.

Simple Diarrhea. — The diarrheas of nervous origin are the result or manifestation of increased peristalsis. This increased peristalsis may be caused by various conditions acting through the central nervous system or by the mechanical action of undigested food. Among the most important of the conditions acting through the central nervous system are sudden changes in temperature, prolonged exposure to heat or cold, fright and fatigue. Food may fail of digestion either because it is unsuitable for digestion, or because the digestive power is functionally weak. In either case the food acts as a foreign body. The intestinal mucous membrane shows no pathological lesions, unless possibly a slight hyperemia. The number and fluidity of the dejections are increased. Except for the presence of more or less partially or entirely undigested food they are normal in character. Perhaps as good a term as any to apply to these cases of the nervous type is "simple diarrhea." They are rare in comparison with the other forms of diarrhea. Their chief danger lies in the increased susceptibility which they produce to invasion by micro-organisms. It is this danger, rather than the severity of the disease itself, which demands appropriate, early and vigorous treatment, even in the mildest cases.

Treatment of Simple Diarrhea. — The first and most important method of treatment is the removal of the cause. This is usually easy when the cause is simply fright or fatigue. When the cause is atmospheric, however, a change of climate may be necessary. When the difficulty is due to undigested food this must be removed. This is best accomplished by castor oil or calomel. As infants bear castor oil proportionately better than adults it is usually advisable to give at least two teaspoonfuls. Calomel is best given in doses of one-tenth of a grain, in combination with a grain of bicarbonate of soda, every half-hour or hour until one grain has been given. In rare instances it may also be wise to wash out the stomach and colon. The infant should be kept quiet in bed. After the cause has been removed the diarrhea usually ceases. If it does not, the treatment should then be directed to the control of the excessive peristalsis. For this purpose opium and astringents may be used. This is, with rare exceptions, however, the only condition in which the use of these remedies is allowable. Opium is best given in the form of paregoric, the dose not exceeding a few drops. I have found tannigen, in doses of from three to five grains, the best of the astringents. As the excessive peristalsis is in many instances merely the expression of general weakness, brandy, in doses of a few drops, will often be more efficacious. It is best to withhold food for a few hours and then to begin with a rather dilute, highly alkaline, pasteurized milk.

Infective Diarrhea. — Micro-organisms are the cause of the great majority of the acute diarrheas of infancy. These micro-organisms may be the usual inhabitants of the intestine or forms not normally present there. They almost invariably enter the body with the food. They are chiefly the ordinary saprophytic bacteria, among the most common of which is the hay bacillus. Bacteriological examinations of the stools in large series of cases have failed, however, to show any definite relation between any special form of bacteria and variety of diarrhea. Bacteriological examination of the discharges is present, therefore, affords no information of value as a basis for either diagnosis or treatment.

The intestines may show all grades of inflammation from simple catarrhal and simple follicular hyperplasia to follicular ulceration and the formation of false membrane. The severity of the symptoms is often no index of the degree of the pathological changes.

The constitutional symptoms are due partly to the lack of nourishment and the abstraction of fluids, but chiefly to the absorption of toxins. These toxins may be formed within the body or taken in, already formed, with the food. Among the most striking of the symptoms of toxic absorption are reflex vomiting, hyperpyrexia, prostration with cardiac depression, and nervous excitement. The most common manifestations of nervous excitement are restlessness, incessant motion and sleeplessness.

The acute diarrheas due to micro-organisms may be roughly divided into several classes which, to a certain extent, call for different lines of treatment. Certain general methods, however, are applicable to all. Among the most important of these is the prophylactic.

Prophylaxis. — This, while important at all times, is especially so in the summer, when these diseases are most common. Infants should be kept in the best possible hygienic surroundings, be given plenty of fresh air and bathed frequently. If feasible, they should be sent to the country or seashore during the summer months. Care must be taken not to overfeed them, as less food is needed in warm weather than in cool. Moreover, owing to the depression produced by the heat the child is less able to digest its food. The deficiency should be made up with water. As these diarrheas are due to micro-organisms and as these micro-organisms are almost invariably introduced with the food, it is evident that every effort should be made to give the child a fresh and sterile food. Too much care cannot be taken in obtaining, transporting and preparing milk during the summer months. It must be remembered, moreover, that the sterilization or pasteurization of milk does not destroy toxins which may be present in it; it merely prevents the formation of more. The toxins present in milk before it is sterilized may well be sufficient to cause severe or fatal symptoms.

Hygienic Treatment — While hygienic measures are of great importance in prophylaxis they are even more so in treatment. The infants should be kept quiet, given the greatest possible amount of fresh air, be lightly clothed and frequently bathed. The napkins should always be immediately disinfected in order to prevent reinfection. If the symptoms do not abate in a few days the children should, if possible, be given the benefit of a change of climate.

Dangers of Opium and Astringents. — Since, as has already been stated, the majority and the most

serious of the symptoms are due to the absorption of toxins from the intestines, it is evident that any method of treatment which prevents the natural elimination of these poisonous products in the dejections is absolutely bad. The frequent discharges are nature's attempts to cure. Hence opium in any form is positively contraindicated. It cannot do anything but harm. Astringents are unsuitable for the same reason. They are less dangerous than opium only because they are less powerful.

Classification of Infective Diarrheas. — As already stated, the infective diarrheas may be roughly divided, largely on the basis of symptomatology but partly on that of pathology, into several main groups. These are known by various names, the best of which are fermental diarrhea, cholera infantum and ileocolitis. Almost all of the summer diarrheas belong in the fermental class, ileocolitis being uncommon and cholera infantum exceptional. In making arbitrary divisions on the basis of symptomatology it must always be remembered, however, that in many cases there is absolutely no relation between the severity of the symptoms and that of the pathological lesions, and that conclusions based on the symptoms alone may be entirely erroneous.

Fermental Diarrhea.—In brief, in fermental diarrhea the number of discharges is only moderate, not usually more than ten or twelve in twenty-four hours. They vary in color from yellow and green through all shades of green. They are often watery or frothy, and may contain more or less curds and mucus, but rarely blood. The amount of the discharge is usually comparatively large. The odor is almost always offensive. In some cases it is markedly sour; in others, very foul. On this basis two main classes have been recognized, the acid fermentation and the albuminoid decomposition. It is supposed that in the first class the trouble is due to bacteria which thrive on sugars, and in the second to those which thrive on proteids. Pain and tenesmus are less prominent symptoms than in ileocolitis. The various constitutional symptoms already spoken of are present in all cases in varying combinations and degrees. All degrees of severity are seen, from the mild cases lasting a few days or weeks to those rapidly fatal in a few days or even hours. The pathological changes are comparatively slight, rarely progressing beyond the stage of simple catarrhal inflammation.

Treatment of Fermental Diarrhea. — The first indication for treatment is to remove the cause, namely, the micro-organisms and their toxic products. In mild cases a purge is often all that is necessary. Castor oil is perhaps the most satisfactory when there is no vomiting, although calomel is applicable in all cases and is altogether the best when there is vomiting. A purge is always necessary, as it is the only way in which the small intestine can be reached. In the severe cases and in all cases where vomiting is an important symptom, it is advisable to wash out the stomach. This is a simple procedure in infants, causing them but little discomfort or exhaustion. An ordinary soft-rubber catheter makes a very satisfactory stomach-tube, especially if the tip is snipped off and rounded by heat. Normal salt solution or a solution of borax or bicarbonate of soda are somewhat better than plain water. If thirst is a prominent symptom it is well to leave a few ounces of water in the stomach. In the more severe cases it is also advisable to wash out the lower bowel. This is done by passing a rather large soft-rubber catheter, with the end prepared as for washing out the stomach, high into the bowel. Several quarts of liquid from a fountain syringe, not more than three feet above the patient, should be allowed to run in and out. The same solutions may be used here as for washing out the stomach. The importance of thoroughly emptying the alimentary tract from both above and below, as well as by purging, can hardly be overestimated.

Unfortunately, it is impossible by the methods detailed above to entirely rid the alimentary tract of bacteria. Enough remain, if the conditions are favorable for their multiplication, to keep up or cause a recurrence of the trouble. The condition most favorable for their multiplication is the presence in the intestine of a suitable culture medium. This medium enters the intestine only through the mouth. Hence the next indication for treatment is to prevent the ingestion of any food which will provide such a suitable culture medium. For this reason it is best to cut off all food for at least twenty-four hours, giving only sterile water. The brilliant results claimed for barley water and rice water in the treatment of the early stages of these cases are probably due to the fact that they contain so little beside water that their use amounts practically to starvation.

Unfortunately, again, temporary starvation rarely suffices to diminish the number of bacteria to such an extent that they cannot cause trouble. The patient, however, demands and must have nourishment. The problem is to give it in the least harmful form. This is, of course, the form most unsuitable for the growth of the micro-organisms causing the trouble. The odor of the stools, as being characteristic of acid fermentation or albuminoid decomposition, would seem to offer some means of assistance. Unfortunately, this distinction is rarely possible or reliable except in the case of the very sour stools. Here an albuminoid diet, with an almost complete exclusion of sugar, is indicated and gives satisfactory clinical results. In the majority of cases, however, the process seems to be a more complex one, and there is no indication for or against any special element of the food. It must, therefore, be selected on general principles. Foods which are principally digested and absorbed high up in the alimentary tract seem, for a time, at least, most suitable. I have found albumin water, or somatose, given in ten or fifteen grain doses in water, most satisfactory.

There seems to be a very general feeling that milk in any form is unsuitable for these cases, on the ground that the pathogenic micro-organisms are usually originally introduced in milk and therefore should thrive better in it than in any other medium. The usual custom seems to be to employ some form of starchy food. I cannot see why, however, if starchy food is bad for a well baby it should be any less bad for a sick baby. I feel that the favorable results obtained from the use of these foods in these diseases are to be explained by the weakness of the foods. It is to their dilution that they owe their success. I certainly have every reason to be satisfied with the results obtained by feeding these cases with dilute milk mixtures after the initial period of starvation.

After the preliminary period of complete or partial starvation, therefore, the child should be given a mixture prepared from *fresh* milk, *low* in *all* percentages, highly alkaline and pasteurized. It is better to give

small amounts frequently than large at long intervals. Experience only can teach just what percentages are to be given in individual cases. In general, the percentage of sugar may be comparatively high, while that of the proteids must be comparatively low. The fundamental principle, however, is to give a dilute food. As the patient improves the percentages may be increased, together or singly, and the intervals of feeding lengthened until the strength and intervals suitable for a normal infant of the given age are reached.

As already stated, the first indication for treatment is to remove the cause. One way to do this is by destroying the cause. In this instance, however, the destruction of the cause involves the destruction of the patient. No germicides in doses large enough to be effectual can be used with safety. Drugs which limit to a certain extent the activity of the micro-organisms can, nevertheless, be used to advantage. After a considerable and varied experience with many drugs, including many of the newer preparations, I have discarded all but bismuth. This is best given as the subgallate. The subnitrate is almost as satisfactory. Either, to be of much use, must be given in considerable doses, not less than one or two drachms in twenty-four hours. Unfortunately, it is difficult to induce a sick infant to take this amount. About as much can be given in the form of powder, mixed with water or milk, as in any other way. It is often given suspended in chalk mixture or simple mucilage. All forms of mucilage decompose very rapidly in warm weather, and after it has been kept twenty-four hours every teaspoonful brings a large reinforcement to the enemy already present in the intestine. The subnitrate of bismuth may be safely given in suspension, however, in the following way:

℞	Ammonio-citrate of bismuth	5
	Ac. nitrici	gtt. xxx
	Aq.	ad 100

The subnitrate formed in this way will remain in suspension for several days. The objection to this preparation is the strong taste of the citric acid and the small number of grains to the teaspoon. It is possible to give this, however, when the dry powder will not be taken.

Sulphocarbolate of zinc, in doses of one-sixth to one-quarter of a grain, seem to diminish the formation of gas and to improve the odor of the stools.

Stimulation is necessary on the same indications and along the same lines as in other diseases.

Certain special symptoms, due to toxic absorption, may require special treatment in addition to that for the removal of the cause. Excessive vomiting is best treated by stomach washing, and hyperpyrexia by cold bathing or packs. Extreme restlessness usually yields to bromides but morphine may be necessary. If it is used, it is best given subcutaneously. Prostration and collapse require stimulation along the usual lines. Brandy and strychnia are most useful and must often be given under the skin.

Ileocolitis. — In ileocolitis are found the more severe pathological lesions. They are usually most marked in the colon and in the lower part of the small intestine. The discharges are numerous, usually comparatively small in amount, contain much mucus, blood and sometimes pus and membrane. The amount of fecal matter is usually small and often fairly well digested. The odor varies, being putrid when there is deep ulceration and sloughing, and almost *nil* when the discharge is composed principally of mucus. Pain and tenesmus are marked symptoms. The abdomen is often tender. Vomiting is usually not a prominent symptom.

Treatment of Ileocolitis. — The treatment of ileocolitis must be along the same lines as that of fermental diarrhea. Purgation, starvation and diet are as important in the one condition as in the other. Proteids are better borne in this condition and should make up a greater proportion of the food. Fat is not as well borne, however, and should not be given except in very low percentages. Bismuth is even more useful than in fermental diarrhea, serving the double purpose of diminishing fermentation and of mechanically coating over the inflamed surfaces.

Owing to the location of the principal lesions in the large intestine it is possible to reach the seat of disease from below. Irrigation provides a means not only for removing the micro-organisms and their toxic products, but also for cleansing the diseased surfaces and making local applications to them. Several quarts should always be used in irrigating the bowel, and the liquid should be allowed to run until it returns clear. Normal salt solution or a two to four-per cent. solution of boracic acid are most useful. Solutions of the stronger antiseptics are no more efficacious and may be dangerous. Irrigations may be used from one to three times daily. Injections of one to two drachms of the subnitrate or subgallate of bismuth in suspension in one or two ounces of freshly prepared mucilage or starch solution should be given immediately after each irrigation. In this way the bismuth is deposited directly on the inflamed surfaces. In the more chronic cases irrigations of nitrate of silver, in the proportion of 1 to 1,000, once in two or three days seem to hasten recovery. A strong salt solution should always be at hand when this is used, in case it proves too irritating.

Suppositories of a tenth or a sixth of a grain of cocaine will often relieve tenesmus. Other special symptoms should be treated as in fermental diarrhea.

Cholera Infantum. — This term should be applied only to those cases of diarrhea characterized by the most intense choleriform symptoms. It is a very rare condition. The pathological lesions are very slight, never progressing further than hyperemia and desquamative catarrh. The bacteria found usually belong to the proteus group.

Vomiting and diarrhea are constant, and both soon become almost entirely serous. As the result, all the tissues are rapidly deprived of their fluids. Thirst is marked. Wasting and prostration are extreme. The internal temperature is almost always high, although the surface temperature may be low. There is intense internal congestion. The disease is self-limited. The course is not more than two or three days, usually less. The termination is almost invariably in death, usually after marked nervous symptoms.

Treatment of Cholera Infantum. — In such a rapid and fatal disease it is evident that treatment to be of avail must be immediate and vigorous. It is probable that there is a vasomotor paralysis of the gastro-intestinal vessels. Hence food and drugs introduced into the alimentary canal cannot possibly be absorbed. They can do no good and undoubtedly may do harm.

The main indications for treatment are: (1) to empty the stomach and bowels of their toxic contents; (2) to supply fluid to the tissues which are being so seriously drained; (3) to restore the surface circulation;

(4) to reduce the temperature; (5) to keep the patient alive until the disease has run its course.

Purgatives act too slowly to be of much use in this disease, and our chief reliance must be placed in stomach washing and intestinal irrigation. They must be used early and vigorously. It is useless to expect to supply fluids by the mouth. They are almost invariably vomited. Cold, sterile water in small amounts may be tried, however. The injection of normal salt solution into the cellular tissue is the only method of introducing fluid which can be depended upon. Not less than a pint should be given in twenty-four hours. This not only supplies fluid to the tissues but assists in eliminating the toxic substances in the blood and in restoring the surface circulation.

Irrigations of cold water tend to restore the surface circulation and also to reduce the temperature. The best methods for restoring the surface circulation are rubbing, mustard baths and the warm pack. These procedures, however, are not those best fitted for the reduction of temperature. For this purpose cold, in the form of sponging, packs or baths, must be used. In the treatment of individual cases it is often necessary to determine whether it is the internal congestion or the high temperature which is doing the most harm, and then to treat the more serious condition. The relief of one, however, often aids the other also.

As food cannot be given, the patient must evidently be kept alive by stimulation. As drugs given by the mouth are not absorbed this stimulation must be given subcutaneously. The usual stimulants are to be employed. Atropine, however, seems to be the most useful. It is to be used in doses of one five-hundredth to one eight-hundredth of a grain. Morphine is indicated when the diarrhea and vomiting are extreme or when the nervous manifestations are very marked. Doses of one one-hundredth of a grain are usually sufficient. It should be given subcutaneously. Care must be taken not to give too much or to continue it too long.

In case improvement begins, stimulants and water may be given by the mouth, and soon after small amounts of a pasteurized fresh milk of very low percentages.

HYGIENICS OF THE SKIN.[1]

BY L. D. JUDD, M.D., PHILADELPHIA.

Great strides in the sciences generally have taken place within the last quarter of a century. Medicine and surgery may justly claim to lead the van, inasmuch as through the marvellous energy and skill exerted in these channels human life has been prolonged and human suffering alleviated to a marvellous degree. These fields are so vast that more than has been done, and so well done, could hardly be expected. There are great things yet to be accomplished, and it seems to me that the greatest must be developed in the line of preventive medicine within the domains of Hygeia. Drug worship seems to run rampant, and in the mad rush for the elixir of life, the medical profession, to a great degree, has ignored the simpler laws of nature. They should be devotees of Hygeia as well as students of her father, Esculapius. To teach people how to live and to avoid disease and suffering is a far nobler, though much more difficult, task than any we have in medicine — to teach how, what and when to eat and to drink; when to relax, repose and to sleep; how and when to exercise; how and when to wash and to dress, to secure the proper function of the skin. To teach these and the grand truth that if the proper advice as to these things is given and observed disease and suffering will seldom occur — is, I admit, a gigantic task. If the physician could always deal with people of brains — by that I mean people who will think reasonably and philosophically, and be willing to accept advice from those who have made a study of these things — then the task would be a pleasurable one. My attention has long been directed to the subject matter in this paper, which I will make as brief as possible, and it is given as the offspring of experience and practical knowledge.

The proper care of the skin is only secondary to that of the proper treatment of the stomach, and the ignorance and apathy in which people are resting on matters pertaining to the care of these organs, which have so much to do with health and happiness, is truly appalling.

It is the duty of our profession to instruct in these things. By hygienics of the skin I refer to the washing and the covering necessary, which embraces the treatment of the skin in health. It is not necessary to enter into an exposition on the structure and functions of the skin. Enough to say that it is nature's own covering, arranged to retain and to give off heat and moisture; to breathe in life-giving gases, and to give off noxious vapors and effete substances: that it is a breathing mechanism, and equivalent to a secondary lung. It is so planned as to be a complete protection to the economy in cold as well as in hot weather, but Eve's fall and society's demands in consequence have ordained that it shall be clothed.

That it is the most abused of all the human economy excepting that of the stomach can be readily understood and easily demonstrated. Many there are who think the frequent washing of it harmful; others that deem it essential to purge it by excessive artificial sweatings —such as in the frequent use of the Russian and the Turkish baths, the indiscriminate use of soaps, oils and fats, harsh rubbings by harsh substances, and, above all, improper material worn as underclothing — not alone improper as to material and quantity, but also as to thickness and weight. Who is there among us that has not run the gamut of all these things in his life, personally and professionally? In the first place, the proper cleansing of the skin is most essential to keep its functions in perfect working order. The first thing in the morning after rising, and, if possible, indulging in from ten to thirty minutes of deep chest breathing and light physical exercises, I advocate the warm bath of short duration, rubbing the surface of the body with the bare hands and without the use of any soap, followed immediately with the sprinkler, with cold water in force from the spigot until the skin is in a glow. Once — say every seven days — a full bath in hot or warm water, using pure Castile soap and following with the sprinkler with cold water, as on other days. When the full bath or plunge cannot be had, daily sponging with hot and then cold water is the next best. In drying the skin soft linen or crash toweling should be employed. Many claim they cannot endure the shock of the sprinkler with cold water, but after a trial, starting gradually at first if necessary, they will soon feel that a bath is incomplete without its use, and

[1] Read before the American Climatological Association, May, 1899.

that the skin seemingly craves it. It is a tonic to the heart by its action on the capillary system, as evinced in the rapid reddening of the skin. In this manner of washing perfect cleanliness is obtained, and the skin is kept in proper working order, and does not lose its elasticity. A wonderful sense of vigor is imparted, and when properly clothed the man goes to his daily duties clad in the right spirit — provided always that he abstains from overloading his stomach.

Now, what is the proper covering for the skin? There is now going on in the periodical press quite a conflict over "the underwear problem" — what and how much to wear, when to change; these are the questions sanitary science is asking. It is to be expected that the answers are as diverse as is the individuality of those answering. More are given through theory than from any practical knowledge born of proper reasoning through experience.

The ideal covering for the skin (that which is generally known as underwear) is linen — not finely woven linen, but loosely woven, as that of a mesh. We would not think of attempting to dry a wet face or body with a woollen fabric; it is too slow in absorbing moisture and equally slow in drying. We employ linen, and any close observer knows that the more loosely woven it is the quicker it dries the skin, and is much more perfect in this respect than any other fabric known; and we also know that when suspended in the air it dries more quickly. Under normal conditions our body loses through the skin from two to three pints of moisture, in the form of evaporation, in twenty-four hours. That material which rapidly takes up moisture, dries the skin and itself rapidly, is the proper covering for comfort and protection. Our skin should be kept dry as well as the air and clothing surrounding it.

The protective feature of clothing depends upon its air-holding capacity or porosity. The defect of wool in the power of quickly absorbing and eliminating moisture is a serious one, and if properly understood would do away with its use for underclothing. A woollen undergarment, when first put on the dry body, will impart to the same a feeling of warmth and comfort, which will continue as long as the evaporation of the skin is not in excess of the ability of wool to absorb and eliminate the moisture. However, if in consequence of impaired radiation of heat, as in summer time, or a greater production of heat, as by physical exercise, evaporation should be increased, wool will be no longer able to absorb the moisture as fast as excreted from the skin, nor will it be able to part with all it may absorb, hence the skin and the air surrounding it, as well as the garment itself, will be moist, and a further evaporation will be greatly interfered with.

Moisture and velocity of air augment the conduction of heat. If the wet body should under the above conditions be exposed to a draft, a rapid abstraction of heat would at once take place which would chill the body and which usually would result in a cold. It is a matter of daily observation that all those who wear wool next to the skin are very prone to contract colds.

A porous linen, having the advantage over all other fabrics of absorbing moisture and elimininating it quickly, will provide for a dry climate around our body, hence will enable us to stand extremes of heat and extremes of cold with comparative comfort. Having further the property of cleanliness and being non-irritating to the skin, it would seem peculiar that its advantage for the purpose of underclothing should not have been recognized until recently.

The fibres of wool as seen under the microscope are barbed and irregular, while those of linen are smooth and round. The advantages of linen over wool in eczemas and all skin diseases prove its protective and non-irritating qualities. J. C. Milton, senior surgeon to Dr. Johns Hospital, London, for the Diseases of the Skin, says in his paper on the "Hygienic Excellence of Linen": "For years I have been fighting the battle of linen against every kind of prejudice and opposition. Long before then I had begun to be very skeptical as to the power of woollen material to protect the wearer against the agencies which bring on catarrh, pleurisy, congestion of the lungs, bronchitis, and rheumatism, principally from observing that precisely the persons who most persisted in oppressing their frames with this kind of clothing suffered most from these ailments. I had to learn that faith in woollen is a piece of fetish worship; that while flannel is not in any way more protective than linen, if, indeed, equal to the latter, the use of it constantly brings on illness and miseries from which those who wear linen enjoy complete immunity." I would not have it understood that I am opposed to wool for clothing. It is the proper material for outer garments and top wear, as it is more impervious to the moisture of the atmosphere, and as an outside garment protects from the radical changes of this trying climate.

The day of the fad for woollen underwear, which has been rampant for over a generation, is rapidly passing, and with it will go much suffering from la grippe, pneumonia, pleurisy, and congestion of the internal organs generally. Many of us can remember the homespun linen we wore in our youth, for in the early days it was the prevailing underwear, and the colds and la grippe, which seem to be products of modern civilization, were almost unknown.

In the literature of all times in the past may be found evidences of linen as the skin covering. The art of weaving fine as well as porous linen was well known in Egypt, India and Greece. Moses, the greatest of all ancient law-givers and physicians, evidently recognized the hygienic properties of linen as underwear, for in Ezekiel xliv: 17, 18, we read: "They shall be clothed with linen garments; and no wool shall come upon them . . . they shall not gird themselves with anything that causeth sweat."

For fully three years I have thoroughly demonstrated through my own personal experience, in my family and throughout my practice, the priceless value of what I have in this paper advocated. I trust it may be the means of directing the attention of this Society to the importance of the subject, as one well within the scope of our organization.

HERNIA FOLLOWING OPERATIONS FOR APPENDICITIS.[1]

BY FRANCIS B. HARRINGTON, M.D., BOSTON,
Visiting Surgeon to the Massachusetts General Hospital.

At the Massachusetts General Hospital, from January, 1888, to August, 1897, 503 cases of appendicitis of all varieties recovered after operation by the various surgeons. The figures here presented are from a

[1] Read at the Meeting of the American Medical Association, Chicago, June 2, 1899.

personal examination of 236 of these cases. The examinations were made with the special purpose of observing the condition of the abdominal wall following this operation. The time which had elapsed since operation varied from nine months to nine years. With the consent of the visiting surgeons of the hospital and with the assistance of Dr. E. A. Codman, an interrogatory letter was sent each one of the 503 patients who recovered. Replies were received from 375. Of this number, 236 came to the hospital for examination.

These cases date from the earliest period of operative interference in appendicitis. The method of operation varied from time to time and with the different surgeons. No attempt has been made to compare the results of the various operators, as the method of treating the abdominal walls did not vary radically.

Many of those who reported themselves as perfectly well had marked general bulging of the abdominal wall on the side operated upon. Some had protrusions of the wound, and some had hernias of which they were not aware, as they caused no trouble.

The scars resulting from the operation varied greatly in character, as all scars do. In length they varied from one and one-half to seven inches. In width they varied from the linear to the very broad, in some instances being four inches wide, showing the result of stretching. Occasionally a scar showed a keloid condition.

The scars varied in color, being pale, white, brown, red and purple. The wearing of a belt seemed to make little difference in the condition of the abdominal wall, nor do I believe that belts are of much value except for a short time after operation. The scar and the abdominal wall showed the best condition in those wounds which were tightly closed. Those wounds which were partly closed showed better results than those which were left open. All of the wounds which were not tightly closed were drained usually by wicks of gauze or by tubular drainage, the amount of drainage material varying with different cases. The incisions in the unclosed cases varied, but for the greater part were oblique either in the linea semilunaris or outside of it. In the unclosed wounds during the period mentioned, from 1888 to 1897, some of the muscular or tendinous tissues were usually transversely cut. This cutting directly across muscular fibres frequently occurred in the cases which were closed at the time of operation.

Of the 236 cases examined, 85 were tightly closed at time of operation; 88 were partly closed at time of operation; 63 were open wounds, no sutures being used.

Intermuscular Spaces.—The examination of the tissues under the scar showed in many of the cases that the edges of the incised external rectus muscle or its tendon could be felt and the fingers inserted between these edges. Sometimes the edges of the internal oblique and rectus muscles could be felt. Examined with reference to the intermuscular or intertendinous spaces which could be detected, it was found that 28 per cent. of the tightly closed wounds showed such spaces; 83 per cent. of the partly closed wounds showed such spaces, and 87 per cent. of those left open showed such spaces. These intermuscular spaces result from cutting or separation of the muscles which were not brought into apposition by sutures. If they are kept apart during the healing process by gauze or other drainage the amount of separation becomes greater and more a source of danger. These conditions are increased if the muscles are transversely cut. The degree of intermuscular separation has been indicated in the following table by the term slight, medium and large, these terms referring both to the length and to the width of the spaces.

INTERMUSCULAR SPACES.

		Slight.	Medium.	Large.	Total.
Closed incisions	85	17	2	3	22 = 26%
Partly closed incisions	88	28	20	25	73 = 83%
Open incisions	63	14	17	24	55 = 87%
Total cases examined	236				

It is interesting to note that there were 23 cases, in which the wound was left wholly or partly open, where a solid wall resulted. These cases were mostly in young, muscular subjects.

General Abdominal Bulge. When we inspect the general appearance of the abdomen we often find that the wall on the side operated upon, if compared with the opposite side, protrudes upon standing or straining. The protrusion may occupy in a general way the whole of the right side or of a considerable area in the region of the scar. This protrusion I have called the "general abdominal bulge." It has been claimed that this bulging is the result of paralysis of the muscles from section of the nerves. It has seemed to me more probable that it resulted from the cutting of the muscles and tendons and the separation and stretching of these parts.

In dissecting a scar in such an abdomen, I have found the fibres of the external oblique and the internal oblique and transversalis muscles lacking in juxtaposition by a space of one-half to two inches. It can be readily seen that this separation would increase the area of the abdominal wall upon the right side. When these muscles are reunited layer by layer as they originally existed this general bulging disappears to a large extent.

GENERAL ABDOMINAL BULGE.

Closed incision	85	6 cases = 7%
Partly closed incisions	88	40 cases = 45%
Open incisions	63	29 cases = 46%

HERNIA.

We now come to the consideration of the cases of hernia existing in the cases examined.

Punctiform Hernia.—In some of the cases little openings in the scar tissue existed, usually not larger than the point of a pencil, through which could be felt the impulse of a small portion of the abdominal contents. These have been designated "punctiform hernias." There were ten of these, all occurring in the cases which were left partly or entirely open. It did not seem probable that these cases would develop into true hernias. None of them caused pain and the patients were for the most part unaware of their existence. These openings might all be closed without difficulty and should be closed if they showed a tendency to enlarge. It is probable that some of these would close in time by the proper development of the abdominal wall, as small hernias often do in infants.

Bulging in the Scar.—Among the 236 patients examined were some cases of protrusion into the scar which might develop into true hernias, but which could not be properly classed as hernias. No constriction existed and the bulging only appeared on straining. The condition indicated a general weakness in the abdominal wall at the region of the scar.

These cases were almost always accompanied by general abdominal bulging. There were 52 cases of this "bulging in the wound." In 27 cases the bulging in the wound was very slight. Two of these slight bulgings occurred in the tightly closed and were the only examples of "bulging in the scar" in this class of cases.

The other 25 cases of bulging were of considerable size, varying in length and in width from one inch to four inches. In all of these latter cases I think the wound should be reopened and tightly closed. For the most part they gave the patient no trouble, and apparently were not increasing in area.

True Hernia. — There were 27 cases of true hernia in the 236 patients examined.

Total number examined	236
" of males	190
" of females	46
True hernias in all	27 = 11½%
" in males	21 = 11%
" in females	6 = 13+%
Wounds closed at time of operation,	85 with 3 hernias = 3½%
Wounds partly closed at time of operation	88 with 11 " = 12½%
Wounds left open at time of operation	63 with 13 " = 20%

Incisions.		Punctiform hernia.	Bulging in wound.	True hernia.	
Closed	85	0	2	3	= 6%
Partly closed	88	5	29	11	= 51%
Open	63	5	21	13	= 67%

It is to be remembered that in the closed wounds the muscles and the fascia were frequently transversely cut, and the wound closed only by a single layer of stitches which would not insure accurate approximation of the cut muscles. The scars in the cases of hernia averaged four inches in length. In these cases hernia occurred somewhat more frequently in women than in men. This I think will be found to be a general fact, due probably to inferior muscular development in women. In all cases of hernia except two the patients had worn supporters.

Wounds partly closed were followed by fewer hernias than open wounds. Weakening of the abdominal wall existed in a large per cent. of the cases which were drained. This enumeration indicates that all cases should be kept under observation. It indicates that drainage should be reduced to as small an amount as is consistent with safety and dispensed with if possible.

A large proportion of these cases of weakened abdominal wall can be cured or improved by operation. I have operated upon four cases of hernia with excellent results. The operation should consist in a removal of the scar tissue. Adhesions of the abdominal contents to the scar should be separated. The wound should be large enough to allow a thorough identification of the various layers of the muscles, tendons and fascia.

The peritoneum with the transversalis fascia should first be closed; then the internal oblique and transversalis. If these muscles have been cut across they should be reunited so as to restore the original condition as nearly as possible. The external oblique should then be restored and the wound closed.

The after-treatment of a hernia operation should be similar to that employed in any closed appendix operation.

For the "interval operation" it is universally admitted that the muscular tissues should not be cut across the fibres. The McBurney incision has been very generally employed for this purpose. Since November, 1896, Dr. C. B. Porter has made a longitudinal incision through the outer border of the rectus in the "interval operation," with excellent results. This incision is now employed by a number of surgeons.

In the acute cases McBurney recommends the cutting of the internal oblique and transversalis muscles across the fibres. This is the method usually adopted. I have found it possible, by enlarging the McBurney incision for "interval cases," to obtain sufficient opening to treat a large proportion of the acute inflammatory cases. The operation is as follows:

Make an incision in the skin four to five inches long in a line with the fibres of the external rectus muscles, at such a distance from the anterior superior spine of the ilium as is desirable. Separate the muscle and its tendon without cutting for a like distance, then insert retractors one and one-half inches broad at either end. The middle of the incision should correspond to the usual position of the base of the appendix. At this point the internal oblique and transversalis muscles run nearly parallel and horizontal. These muscles should be separated, without cutting, down to the transversalis fascia, and from the ilium to the linea semilunaris. If this does not give sufficient room the sheath of the rectus may be separated in front and behind the muscle in a line continuous with the separation of the internal oblique and transversalis muscles.

The sheath of the rectus muscle is formed by the aponeuroses of the oblique and transversalis muscles. The direction of the fibres of the sheath is horizontal, being at right angles to the line of muscular fibres of the rectus. At the semilunaris line it will be necessary to use the knife or scissors, since at this point the union of the various aponeuroses is very compact. The rectus muscle can then be drawn toward the linea alba and considerable room obtained.

Care should be taken not to cut the deep epigastric artery which at this point lies inside the rectal sheath in the posterior part of the muscle. If necessary it may be tied. Two retractors each about two inches broad should be inserted one at either end of the deep incision; the retractors which have been used for the external oblique can now be dispensed with.

To approach the appendix in cases of acute inflammation, with or without suppuration, I make it a point to enter the general abdominal cavity beyond the region of the appendicular mass. The inflammatory mass is not attacked until its extent and outline have been determined and it has been isolated by a wall of gauze. This method gives good results. Having cut through the transversalis fascia and the peritoneum in a line with the deep incision we have an opening into the abdominal cavity two inches wide and from two to four or more inches long. This is sufficient for nearly all operations upon the appendix. No portion of the tissues essential to the integrity of the abdominal wall has been cut through, except for a slight incision at the semilunar line.

The opening of the rectal sheath is frequently found to be unnecessary. When the retractors are removed the muscular layers come together and even without sutures present a firm obstruction to the protrusion of the abdominal contents. If the rectal sheath has been opened it should be closed with sutures. A suture should be used to unite the cut edges of the linea semilunaris. Other sutures should be used as far as drainage will permit. If drainage can be avoided then the separated layers of muscle should be closed carefully.

All drainage should be removed as soon as safety

will permit. When the wound has healed and the stitches have been removed, the patient should be taught to make gradual and careful use of the abdominal muscles in order to restore them to their normal tone. For a month after healing a simple supporting swathe may be used, but the prolonged use of abdominal belts or trusses seems to me undesirable.

If the patient wears a firm abdominal belt and is advised to make little use of the abdominal muscles, there is danger that the muscles may become atrophied and atonic from non-use, as the muscles of the arm or leg do when in splints. Gymnastic exercises for the development of the abdominal muscles should be carefully and persistently followed out.

These exercises seem to me of great importance. Some of the best results in cases which were drained occurred in men who were obliged to resume laborious work soon after leaving the hospital. Having practised for two to three months at home those exercises which tend to develop the abdominal muscles the patient may with safety begin the more active outdoor exercises, such as bicycling, rowing, canoeing and golfing, or if his work is laborious he may resume it. The following exercises are suggested for immediate home use, the amount and duration of effort being gradually increased:

(1) Bend the trunk forward, backward, laterally, and, lastly, circularly. At first hands on the hips; to increase work, hands at neck.

(2) Lying on back, hands at neck, lift the legs stretched (very slowly) as far as the vertical; lower them slowly.

(3) Sit on bench about one foot high, feet supported under bed or bureau, bend trunk backward 45°; hands at hips.

These exercises are desirable even in cases in which some portion of the abdominal muscles or tendons have been cut transversely. If a tendency to protrusion appears an operation to reunite the severed tissues will be desirable.

For the past sixteen months I have followed this method of operation and of after-treatment in acute cases. It rarely has been necessary to cut muscular or tendinous fibres. Immediately after the wound has healed, gradual use of the abdominal muscles has been encouraged. Abdominal belts have not been used. The results thus far have been very satisfactory, even in those cases in which the wounds have been left open for drainage.

The "enlarged" McBurney incision does not interfere with drainage. After drainage has been removed and the wound has healed, if the uncut muscles are exercised, while the granulation tissue is soft and pliable, they tend to resume their original position and strength. Thus the space made by the drainage is closed and the separated muscles come into apposition. A patient of this class was allowed eight months after operation to train and enter a boat race, with the best of results to the abdominal walls.

RÉSUMÉ.

Hernia and bulging occur frequently after operation for appendicitis, and result from the separation of muscles and other tissues in the scar. They are very common when drainage has been used.

The muscular and tendinous fibres should not be transversely cut in any appendix operation unless it is unavoidable.

As little drainage material as safety will permit should be used. When drainage is necessary the wound should be closed as far as possible with sutures and the drainage removed as early as safety will permit. If the wound can be closed immediately the tissues should be restored to their normal position by suturing each layer.

Stout belts and trusses are of little value and may even do harm.

The abdominal muscles from the earliest period possible after operation should be developed by appropriate exercises.

If hernia or marked bulging appears, operation for cure is safe and satisfactory.

Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON.

THE HISTOLOGY OF THE NERVOUS SYSTEM.[1]

RECENT investigations into the fine anatomy of the nervous system have led to certain opinions which may change our views as to the neuron theory, especially as to the point that the connection between the neurons is by contiguity and not by continuity. Apáthy, some two years ago, found in the nervous system of certain invertebrates that in the axis cylinders there were distinct fibrillæ, which had been described by Golgi some ten or twelve years before, imbedded in an interfibrillary substance. These "primitive fibrillæ" he regarded as the conducting element in the nervous system. They grew in two directions: centripetally to the ganglion cell, and peripherally to the sensory, muscular or glandular cell. The fibrillæ, however, end in none of these cells, but the conducting fibrillæ pass through the cells which enfold them. They go beyond the cells and their real termination is unknown. Apáthy distinguishes sensory and motor fibres according to the arrangement of the fibrillæ in the axis cylinder. Many of the fibrillæ coming from the periphery break up into a network of elementary fibrillæ before they reach the ganglion cell, uniting with one another, but they neither end nor begin in the ganglion cell and have no connection with its nucleus. The ganglion cell he regards as the centre of the nervous process, producing a constant current and reacting to the changes caused in this current by external influences.

Bethe[2] has confirmed Apáthy's discoveries by independent investigations on the ganglion cells of the crab and also in vertebrates and man. He holds that since the nerve fibre is not the conductor, but merely contains the conducting fibrillæ, the neuron ceases to be an anatomical and physiological unit; connecting paths between different points of the nervous system run in one and the same neuron, and the old theory of connection by continuity must replace the modern idea of connection by contiguity. In the lower animals the elementary network is probably contained in the ganglion cell, but in higher animals it is wholly outside the cell. He concludes that

[1] Mitthell. aus der zoolog. Station zu Neapel, xii, 495, 1897. Ref. in Monats. f. Psych., March, 1899.

[2] Arch. f. mikroscop. Anat., li, 382. Morpholog. Arb. v. Schwalbe, viii, 95.

the neuron is not an anatomical or physiological unit; that there is no comprehensive difference between the protoplasmic process and the axis-cylinder process, and that the relations between the nerve cells and the fibrillæ are probably purely nutritive.

Apáthy has studied only invertebrates. Bethe has studied merely the fibrillæ in the ganglion cells in vertebrates. Nissl[3] advances the theory, chiefly speculative, that there is a fibrillary network between the cells, and that the gray matter of the nervous system in vertebrates is composed chiefly of this network. Like Bethe, he considers the neuron no longer a unit, but he ascribes to the ganglion cell, which is so closely bound up with the fibrillæ, an important part in nervous functions.

These views have been vigorously attacked by Lenhosséek,[4] who admits that fibrillæ exist in the axis-cylinder process, but he claims that Bethe himself has not observed an actual anastomosis between the fibrillæ from two different neurons. Bethe,[5] however, affirms that both he and Apáthy have actually seen such anastomosis and that they have never found the free ends of the fibrillæ. Lenhosséek further concludes that the neuron doctrine is not ended, but that it is based on positive anatomical data. No one has yet proved that the data on which it is based are deceptive or artefacts. The sporadic anatomical statements which Apáthy has advanced against the neuron doctrine have all been contradicted, and Apáthy's claim that the elementary fibrillæ form a connecting network in the neuropil is not yet confirmed. Physiology can bring nothing against the neuron doctrine and pathology confirms it. As long as isolated statements about the elementary network are not confirmed by others and found true in vertebrates, the neuron doctrine must be recognized. No one is justified, according to our present knowledge, in claiming that the neuron doctrine has received its death-blow. If a passage of the fibrillæ from one neuron to another should be confirmed, the neuron doctrine can still be held with certain limitations, and we must still hold firmly to the conception that the neuron is genetically derived from the neuroblast and is a trophic-cell territory complete in itself.

MOTILITY OF THE NEURON.

The theory that the neuron has an independent ameboid movement, advanced by Lépine, Rabl-Rückhard and Duval, continues to excite interest, although opposed by such observers as Lenhosséek and Ramòn y Cajal. Duval[6] again recalls the modern theory that the connection of the neurons is by contiguity and not by continuity, and argues that their prolongations are susceptible of motion owing to the contractility of the protoplasm. From this a histological theory of sleep, by retraction of these prolongations, has been deduced by Pupin, and by this retraction is also explained the arrest of nervous function leading to acts of inhibition (hysterical anesthesia or paralysis). Pergens has confirmed ameboid movements in the olfactory and retinal cells, and Demoor has noted retraction of the prolongations of the pyramidal cells in fatigue. Duval thinks the theory confirmed by the researches of Manouélian on the olfactory bulb of fatigued mice. He advances the hypothesis of *nervi nervorum*, centrifugal fibres regulating the ameboid activity of the nervous elements and acting upon the junction of two sensory neurons according to the state of attention commanded by the brain. These centrifugal fibres have been discovered by Manouélian near the glomeruli of the bulb, and he believes that such an arrangement exists elsewhere in the nervous system.

Odier,[7] after an elaborate series of experiments, has come to the following conclusions:

The nervous cell of the spinal cord is susceptible of motion, and by powerful fixation agents it may be surprised in phases of activity or rest regulated by experiment, and it shows modifications in form, volume and internal structure. The movements are manifested in the protoplasmic prolongations. Completely relaxed in a state of rest, they perform a movement of cellulipetal retraction in a state of normal activity. Artificial excitation accentuates this retraction in direct ratio to its duration and intensity. If this excitation does not produce an electric current, the retraction of the dendrites acts as if due to a current, as the prolongations parallel to the supposed current are alone affected. The cellular body, more resistant than the prolongations, yields gradually to an excitation of a certain duration. It causes equally a retraction in the direction of the nucleus. The nucleus retains its normal form longer than the prolongations and the cell body. In the advanced stages of excitation it is the seat of a manifest turgescence, which persists even after the cell body has begun to retract, but it too retracts on prolonged excitation. The chromatin is actually consumed; it is represented in a state of rest by masses regularly distributed, but they become asymmetrical after moderate excitation. If the excitations be violent and short the chromatin attains its maximum of colorability, but if the action be prolonged the colorability rapidly diminishes. The state of fatigue and exhaustion which follows extreme excitation is accompanied by retraction of the prolongations, progressive reduction of the chromatin, retraction of the cell body, later by retraction of the nucleus, and still later by retraction of the nucleolus. The chromatic points contained in the nucleus are the most sensitive to excitation. Their number decreases rapidly in direct ratio to the activity of the cell.

ARTERITIS IN NEUROPATHOLOGY.

Coulon,[8] at the Congress of French Alienists and Neurologists, has presented an excellent review of the influence of arteritis in causing pathological changes in the nervous system. He decides that, in the great majority of cases, if arteritis be added to lesions of the nerve cells, we are not authorized in considering arteritis as the cause of the nervous disease; but, although the rôle of arteritis is limited in the pathogeny of disease, it is very important as the direct cause of certain accidents: aneurismal dilatation, arterial rupture and thrombotic obliteration. A tissue does not need, in order to perform its functions normally, all the blood brought to it by the vessels, so that a considerable diminution of the vessel's calibre is compatible with normal functions. When the organ enters into greater activity, demanding increased blood supply, it may still not need all the blood that normally

[3] Münch. med. Wochenschr., Nos. 31-33, 1898.
[4] Neurolog. Centralblatt, Nos. 6, 7, 1899.
[5] Loc. cit., No. 12, 1899.
[6] Revue scientifique, March, 1898.
[7] Revue méd. de la Suisse romande, February, March, 1898.
[8] Revue Neurologique, August 30, 1898.

can be brought to it, but if the calibre of the vessels be diminished the organ may be normal in repose, but in exaggerated activity it will show phenomena of intermittent claudication. If the calibre of the vessel be wholly obliterated, there will of course be complete ischemia and necrobiosis in the region supplied by the obliterated vessel. If an aneurism be produced by the arteritis the phenomena observed will be due to the presence of the enlargement or aneurismal tumor or to the rupture of the aneurism, the chief cause of cerebral hemorrhage. Finally an embolus may produce thrombotic obliteration with its consequences. The rôle of arteritis in the pathogeny of nervous disease must be ascribed almost wholly to these accidents and their consequences. The influence of arteritis in the production of sclerosis is only secondary. Sclerosis is due to processes of infection or intoxication acting upon the nerve cell or the connective-vascular system, not by affecting the vessels primarily, but by affecting the other tissues together with the vessels, both arteritis and sclerosis being manifestations of the same infection or intoxication. The degree of hereditary or acquired cellular degeneration may account for the predominance of the lesions in the arterial system or the nervous elements. Intoxications generally have little action upon the arteries as the initial point of attack, but they probably have a greater influence upon existing arterial lesions. Their action, however, is uniform upon all parts of the arterial system, so that we must beware of ascribing to intoxication other arterial lesions of a circumscribed nature. In most cases the arterial lesions of the nervous system are lesions of endarteritis having the character of a local process. Their involvement of the neighboring nervous elements is to be explained only by propagation of inflammation if the arterial lesions be primary; but in most cases the arterial and nervous lesions are concomitant, rising from the same pathogenic influence, most commonly infection. This fact explains why a pathogenic cause, affecting all the elements of an organ, may determine by very variable localizations of the infection, local lesions in which we find vascular alterations by the side of alterations in the nerve cells, while the neighboring regions may be nearly or wholly exempt. The violent attacks which cause rapid necrosis of the elements determine in nervous tissue all the characters of acute inflammation. In most infectious diseases which attack the nervous system the arteritis is concomitant with the nervous lesion but does not create it. In slower inflammations the two lesions may march side by side, with greater predominance in the arterial or the nervous system, but still being independent. In diseases of a more or less systemic character the trouble is not due to arteritis. The degenerative lesions of white columns of fibres are due to lesions of their cell centres; but in the affected regions the arteries sharing in the inflammatory process naturally affect in the distribution of their lesions a topographical disposition like that of the affected region. In chronic inflammation of nervous centres ending in sclerosis, which is never of uniform extent in the organ but affects certain territories in particular, often to the exclusion of others, the sclerosis is the consequence of inflammatory processes, often repeated, determining at the same time reactions on the part of the vessels and on the part of the nervous elements in these territories; but the sclerosis is not due to the arterial lesions. In the pathology of the nervous system the rôle of arteritis is almost wholly included in that of the secondary lesions to which it may give rise: aneurismal dilatations and the local phenomena which they determine; diminutions of calibre due to thickening of the arterial walls, which may cause intermittent claudication and ischemia; embolic or thrombotic obliterations which cause foci of softening; and finally ruptures of arteries with their attendant accidents. Aside from these accidents arterial lesions, even though far advanced, may be attended with no symptoms.

PLANTAR REFLEX.

Collier[*] has studied the plantar reflex in one hundred normal adults, one hundred normal children and three hundred cases of nervous disease and his investigation confirms the opinions of Babinski, Von Gehuchten and Brissaud. In normal adults, after gentle stimulation of the sole of the foot with the finger nail or a soft quill, the following order of contraction of the muscles was observed: (1) contraction of the tensor fasciæ femoris, sartorius and adductors, and flexion of the hip; (2) flexion of the four outer toes (sometimes 1 and 2 are simultaneous, and rarely the order is reversed); (3) dorsiflexion of the ankle; (4) flexion and adduction of all the toes; inversion of the foot by the tibialis posticus; flexion of the knee; (5) contraction of calf muscles; (6) contraction of quadriceps. This normal form of the reflex characterized by flexion of the toes and marked early action of the tensor fasciæ femoris he calls the "flexor response." In infants, however, the earliest response, in the normal reflex, is in the great toe, which is drawn back; this is followed by extension and spreading out of all the toes, with eversion of the foot, dorsiflexion of the ankle, and subsequently, flexion of the hip and knee. This form, "infantile response," is also seen in the monkey. In lesions of the pyramidal tract the response is similar to the "infantile," but it is more deliberate; extension of the great toe precedes all other movements, followed by extension of the other toes and dorsiflexion and inversion of the ankle; the tensor fasciæ femoris does not contract early; the tibialis posticus and anticus and the peroneus longus contract strongly, increasing the plantar arch and fixing the ankle, which moves much less than with the normal reflex. This he calls the "extensor response." With slight lesions of the pyramidal tract combinations of flexor and extensor responses may occur. The plantar reflex is probably never absent in healthy subjects. In infants the "infantile response" persists until the establishment of complete volitional control of the legs between the second and third year of life. In sleep the reflex is diminished, but the form is preserved, except that in some children up to the age of twelve the "infantile response" returns during deep sleep. In almost all cases of lesion of the pyramidal tract the "extensor response" above described is noted. This change in the reflex is one of the first signs to appear and is the last to disappear when the lesion is temporary. It may be the only unequivocal objective sign of a lesion of the pyramidal system. It is never found under other conditions, except in the increased reflex excitability of the cord due to tetanus or large doses of strychnine, one-sixth to one-third of a grain, and is a

[*] Brain, xxii, 71, No. 85, Spring, 1899.

sign of great clinical value. In cases of total transverse lesion of the cord the "extensor response" is the only reflex phenomenon present in the lower limbs. In functional cases the reflex is hard to elicit and there is often no response in the foot, but the hip muscles usually respond; the form is the "flexor response." In tabes the reflex was absent in one-fifth of the cases; the form is the "flexor response," but it is often confined to the hip muscles. In peripheral neuritis the reflex when present is the "flexor response," which may be confined to the hip muscles. In cerebral and cerebellar tumors the "flexor response" occurs, if the pyramidal tract be not involved. In neurasthenia, chorea, paralysis agitans, poliomyelitis, myopathy and sciatica the "flexor response" is found. Pes cavus is often found in lesions of the pyramidal tract. It is intimately associated with the "extensor response" and is produced by a state of reflex hypertonicity preponderating in these muscles which respond most vigorously in the plantar reflex. In all such cases of pes cavus evidence of increased tone in certain muscles can be demonstrated. The theory that the pes cavus of spastic conditions is due to weakness of the interossei is not justified.

SPONDYLITIS DEFORMANS.

Under the name of *spondylose rhizomélique*, Marie [10] has described an affection characterized by the coincidence of a complete anchylosis of the spine with a more or less pronounced anchylosis of the proximal (root) articulations of the limbs, the small distal articulations remaining intact. The hip-joint is most affected, the arms preserving fair movement. The spine is anchylosed so that the upper part is bent forwards, and the face looks forwards and downwards. The thighs are flexed on the trunk, so that the patient is obliged to flex the knees to preserve his equilibrium. The thorax is flattened and the ribs are motionless. There is considerable pain, chiefly in the sacral but later in the cervical region, but there are no indications of acute inflammation. Marie and Levi [11] later report an autopsy on one of these cases. There was no marked ossification of the intervertebral discs, but the yellow ligaments were ossified almost completely throughout their whole length; the articular processes were united by bony anchylosis; the spinous processes were enlarged and showed a tendency to union, and the ribs were united to the vertebral bodies and the transverse processes. Radiographs of other cases show similar conditions. The prognosis is extremely grave, the disease making continual progress in spite of the most careful treatment.

The condition described by Marie had already been noted by Strümpell in the first edition of his text-book in 1884, and other cases had been reported by him [12] and Bechterew.[13] Strümpell's cases had comparatively little pain, the spine was straight and the smaller joints were not involved, unlike arthritis deformans. Bechterew had also noted slight paresis, diminished sensibility and various paresthesiæ. Bechterew, in subsequent communications, [14] points out that his cases by the presence of kyphosis, pain, sensory disturbances and certain root symptoms hinting at involvement of the cord, and by the absence of anchylosis of the hip, differ from those reported by Strümpell, Marie and others, and that in his cases heredity, trauma and syphilis seem more important etiological factors than rheumatism. He reports various cases showing symptoms of the two types of affections, which he calls "rigidity of the spine with kyphosis," and "anchylosis of the spine and extremities," the latter corresponding to the type described by Strümpell and Marie. In an autopsy of a case of the first type he found anchylosis of the spine and marked degeneration in the nerve roots and spinal ganglion, with a chronic spinal meningitis. The anchylosis did not involve the articulations of the spine, but the intervertebral discs had atrophied and the anterior portion of the bodies had become anchylosed. Bechterew regards these vertebral changes as secondary to the changes in the nerve roots and meninges and analogous to the vertebral changes seen in syringomyelia.

TORTICOLLIS.

Redard,[15] in a recent monograph, has studied the various forms of torticollis. Congenital torticollis is comparatively common and follows bad positions of the fetus, perhaps kept up by amniotic adhesions, the head being kept in such a position that the two ends of the sternomastoid are approximated for a long time. The frequency of congenital torticollis on the right side coinciding with the positions most commonly observed, its association with difficult labor, breech presentations, etc., and the coexistence of craniofacial hemiatrophy and other deformities, favor this view. Beside the forms of acquired torticollis due to cicatrices, muscular or articular troubles, etc., there is a true nervous torticollis. Lesions of the nervous centres (tumor, hemorrhage, softening), may give rise to it, or it may develop, on the side opposite the lesion, after compression of the brachial plexus or other peripheral lesions. Spasmodic torticollis must be considered as a spasmodic affection of several muscles rather than of one muscle or the muscles supplied by one nerve; it is independent of any anatomical lesion, and the etiology is still obscure, but, in most cases there are indications of neurotic heredity, degeneration, migraine, neurasthenia, etc. The spasm may be produced by various causes and is sometimes associated with general diseases. It is probably of cerebral origin; but although Brissaud holds that it is wholly psychical, a localized inhibition of the will, and that a mere touch may check it, Redard considers that it is not yet proven that spasmodic torticollis is purely psychical, since other spasms of an organic origin may at times be checked by equally slight influences. Torticollis with quick clonic spasms is usually a manifestation of some variety of tic or of paramyoclonus; true spasmodic torticollis may sometimes be a symptom of hysteria. Paralytic torticollis may exist, but it is extremely rare. Redard considers that gymnastic exercise plays an important part in all methods of treatment, but he gives a fairly complete account of the various forms of surgical intervention, Kocher having reported seven recoveries out of 12 cases where he cut all the muscles affected, and Isidor having collected 35 cases of resection of the spinal accessory, with six cures and 14 improvements.

Feindel [16] endorses the gymnastic treatment of spas-

[10] Revue de Médecine, April, 1898.
[11] Revue Neurologique, May 30, 1899.
[12] Deutsche Zeitschr. f. Nervenheilk., xi, 338, 1897.
[13] Neurolog. Centralblatt, July 1, 1898. Deutsche Zeitschr. f. Nervenheilk., xi, 327, 1897.
[14] Deutsche Zeitschr. f. Nervenheilk., xv, 37, 45, 1899.

[15] Le torticolis et son traitement, Paris, 1898.
[16] Nouvelle Iconographie de la Salpêtrière, November 1897.

modic torticollis, subscribing to Brissaud's theory of its psychical origin. His treatment consists of simple exercises, gradually becoming more complicated, and consisting of exercises of immobility and exercises of movement. In the exercises of immobility the patient at first sits with the chin supported on a rest and keeps the head motionless as long as possible, resting at the first sign of fatigue; later the patient sits without the support, leaning back in the chair, later still he stands and walks, always keeping the head motionless until he begins to feel fatigue. The exercises of movement consist of turning the head to the right or left, bending it toward each shoulder, etc., in different positions of the body. The movements are made slowly, gently and without any brusqueness, ceasing at the first onset of fatigue. Gradually, more complex movements are introduced. The sessions are at first of short duration, two to four minutes, but later they may be increased to ten minutes. They should be repeated five or six times a day, and at least once a day under the direction of the physician. With marked improvement the patient may prolong the session and be left for a time to himself. Mild galvanism for two to five minutes, or light massage, may advantageously follow one of the daily sessions of gymnastics, or they may alternate on successive days. In cases where the patients have been docile and persevering this method has led to complete cure.

TUMORS OF THE CORPUS CALLOSUM.

Devic and Pariot[17] have studied the symptoms in 18 cases of tumor of the corpus callosum and have concluded that in some cases a correct diagnosis of the seat of the tumor can be made. In every case but one the growth was a glioma, and as a rule adjacent regions are involved. The symptoms therefore vary in accordance with the variation in the neighboring parts involved. In some cases, owing either to the small size of the tumor or to the fact that neighboring parts are involved so as to give more striking localizing symptoms, a diagnosis is impossible. Devic and Pariot, however, maintain that there are two cardinal symptoms which should lead us to diagnosticate a tumor in the corpus callosum. The first is the early appearance of mental disturbances and disorders of intelligence; the second is the onset of paresis, contracture or convulsions, predominating on one side but involving the other to a lesser degree. These symptoms the authors, after a study of the cases of absence of the corpus callosum, attribute less to the lesion of the corpus callosum itself than to the involvement of the fronto-occipital association fibres or the coronal fibres from the frontal convolutions.

MENTAL DISTURBANCES IN CEREBRAL TUMORS.

Gianvilli,[18] from a study of ten cases of cerebral tumor and a careful review of the literature, concludes that when hallucinations exist in cases of tumor, they indicate an irritation of the corresponding cortical sensory centre, although we cannot affirm positively that the new growth is in the immediate neighborhood of the centre. The more the mental symptoms (torpor, intellectual arrest, failure of memory) manifest themselves in the beginning of the trouble, the more probable it is that the tumor is in the frontal lobe, and especially in the prefrontal region. In tumors in other parts of the brain the mental troubles are of later development, although they do not differ in kind from those observed in tumors of the frontal lobe. The loss of mnemonic verbal images, auditory or visual, produces a special form of dementia (graver in loss of auditory images) and indicates a definite localization in the left temporal or left parieto-occipital region. These mental troubles indicate a more or less intense and more or less diffuse alteration of the cortical morphological elements. Tumors of the corpus callosum are always (?) accompanied by mental disturbances. The modifications of sentiment which may appear in the course of a cerebral tumor have no localizing value. When the new growth presents the picture of paralytic dementia the growth is most probably in the frontal lobe. When ideas of grandeur exist the growth is most probably in the frontal lobe. A tendency to childishness or marked alterations of character indicate that the tumor is in the frontal lobe, and, by preference, in the right frontal. When, in a case of cerebral tumor, there are disturbances of the adaptation of means to the end in motor acts of a higher order, the growth is probably in the cerebral hemispheres in the neighborhood of the psychomotor zone, and by preference in the frontal region.

SENSORY DISTURBANCES IN HYSTERIA AND EPILEPSY.

Richter[19] has made a careful study of the disturbances of cutaneous sensibility and of the special senses in 71 cases of hysteria, 49 of epilepsy, and eight of hysteria and epilepsy combined (hystero-epilepsy) and has come to the following conclusions: Concentric limitation of the visual field in hysteria and epilepsy is, as a rule, a result of subjective nervous symptoms and psychical disturbances. Attacks by increasing these symptoms cause a greater limitation of the visual field. By psychical influence on the patient while using the perimeter we may as a rule diminish the limitation and thus obtain a normal visual field. An objective contraction of the field, independent of these morbid signs, was not found in any one of the 128 cases; the visual field for colors was usually not altered in position even in hysteria. A transitory change in the order of color perception is occasionally seen in the same patient. No form of disturbance of sensibility, not even hemianesthesia, has *a priori* a differential diagnostic significance in hysteria and epilepsy. A regular onset of anesthesia after hysterical attacks was not confirmed, but sensory disturbances are apt to come on as the condition grows worse and disappear as it grows better. Sensory disturbances come on without any rule after epileptic attacks; they are rare and without significance.

AGRAPHIA.

Since the days of Trousseau a considerable number of writers have maintained that there was no separate writing centre, but that writing was performed only through the medium of Broca's speech area, and that agraphia occurred either as the result of the destruction of this area or of the complete destruction of the visual area in the angular gyrus. This theory has been vigorously maintained in recent years by Dejerine and his pupils and in this country by Collins.

Gordinier[20] has recently reported a case which com-

[17] Revue de Médecine, December, 1897.
[18] Polyclinico, July 15, 1897.
[19] Archiv für Psychiatrie, xxxi, 574, January, 1899.
[20] American Journal of the Medical Sciences, May, 1899.

pletely overthrows this theory and establishes beyond dispute the existence of a writing centre. The patient was a woman of thirty-seven, who began to suffer from dizziness and later from severe headache and vomiting. About three months later she noticed some failure of vision and numbness in the right arm. Optic neuritis was present, and paresis of the right external rectus muscle. The right hand was slightly weaker than the left, but the fine and coarse movements of the hands were normal, and there was no sensory disturbance. The patient was able to recognize and to name accurately, with her eyes closed, any familiar object placed in her right hand. She understood perfectly what was said to her; she recognized familiar hymns; she could repeat orders from dictation, and speak voluntarily, without the slightest hesitation, and always correctly. She could read correctly, with the aid of glasses, ordinary print or handwriting, and she recognized numerals at once. She had, however, a total inability to write; although she understood written language perfectly, and although she could read to herself or aloud, she could not write voluntarily or form correctly a single letter, and she could not write from dictation or copy. She held the pen in a perfect manner and performed all the movements as if to write, but her writing consisted of nothing more than a series of united curves. Before her illness she could write perfectly. Later on there was some slowness in cerebration, but no other symptoms developed. An operation was attempted, but after a trephine opening was made her condition became so alarming that the operation had to be suspended, and on coming out of the ether her right arm was found to be paralyzed. Two days later she became unconscious and died.

At the autopsy a glioma, about two centimetres in length, was found at the foot of the second frontal convolution, being distinctly separated from the arm area by the precentral sulcus. Broca's convolution was found perfectly normal, as was its associated centrum ovale; the supramarginal and angular gyri, with their associated white matter, and the convolutions and white matter of the occipital and temporal lobes, were also normal. The brain elsewhere showed no pathological changes.

Reports of Societies.

NEW HAMPSHIRE MEDICAL SOCIETY.

THE one hundred and eighth anniversary meeting was held in the Grand Army Hall, Concord, May 25 and 26, 1899. The Association was called to order at 11 A.M., the President, DR. GEORGE H. SALTMARSH, of Lakeport, in the chair. There were one hundred and fifty present, which is a large attendance for a small State like New Hampshire. Prayer was offered by the Chaplain, REV. JOHN VANNEVAR, of Concord.

The reading of the records of the last meeting was dispensed with, the same having been published and distributed. The report of the Committee of Arrangements by its Chairman, DR. D. EDWARD SULLIVAN, of Concord, was followed by the report of the Chairman of the Executive Committee, DR. F. A. STILLINGS, of Concord.

The Maine, Massachusetts and Vermont Medical Associations were represented by delegates, who were the guests of the Society and were invited to take part in the proceedings.

The usual committees were appointed by the President, when the meeting was declared open for the reading and discussion of papers.

DR. CHANCEY ADAMS, of Concord, presented the first paper, which was a dissertation on

INSANITY IN ITS RELATION TO CRIME.

Dr. Adams, having had considerable experience in an institution for the care of the insane at Elmira, N. Y., made his paper very interesting in bringing to the attention of the Society many conclusions and deductions that had been made plain to him in his association with this class of people. He pointed out that it was not always easy to differentiate between the sane and the insane; that hereditary influence, especially in certain directions, had much to do with the development of certain forms of insanity. He showed that environment and centralization had much influence in child life to beget crime and other traits of character that might be avoided with better surroundings. Instances were given in which special degeneration seemed to be intensified when the mind tended to delusions of a religious, political or erotic character. The influence of a prison with the environments and associations of life in a cell formed a picture worthy of study by the philanthropist.

The discussion was opened by DR. FREDERICK L. HILLS, assistant in the New Hampshire Asylum for the Insane, who very graphically described our advancement in the knowledge of insanity and its causes, and gave it as his opinion that the conclusions of experts in this form of disease were now much better understood and recognized by the courts than ever before. He gave some characteristics of people who had been declared insane by the courts, yet he was not prepared to say that all such people should be cared for in an asylum instead of prisons. To the general practitioner, this paper and discussion was very interesting as showing that the judgment of experts in insanity is in a certain degree in accord with that of the public, in that certain forms of this disease require prison life rather than a temporary residence in an asylum.

DR. GEORGE I. CUTLER, of West Swanzey, gave a report on

SOME FORMS OF PARALYSIS OBSERVED IN COUNTRY PRACTICE.

This paper was a *résumé* of certain forms of nervous diseases as observed by the general practitioner, and some of the cases reported were but initiatory symptoms of those recognized in a more pronounced degree by the author of the first paper.

In the discussion of this paper, DR. PROUTY, of Keene, gave one condition that causes paralysis, which has not been explained in the text-books. He referred to a contusion of the circumflex and musculospiral nerves, caused by accidents. Since the advent of the bicycle these cases have become more numerous, as accidents are constantly occurring.

DR. H. L. STICKNEY, of Newport, reported a case of

SEVERE INJURY TO THE HAND,

in which he achieved much success in a conservative treatment instead of destruction of tissue; in other words, asepsis, antisepsis and cleanliness combined with

skin grafting and hypnotism to allay nervous irritability succeeded in giving the man a useful arm and hand, that under ordinary circumstances would have been sacrificed by amputation. The possibility of grafting the entire finger with equal success was suggested by Dr. Stickney.

Dr. Emdon Fritz, of Manchester, in a report on

TYMPANO-MASTOIDITIS,

described the causes and symptoms of this form of disease. In detailing the usual symptoms to be found in such cases, he said that temperature was an uncertain symptom and could not always be relied upon. He gave the common forms and varieties of this formidable disease, described the operations necessary for relief of the trouble, and described also many of the disagreeable sequences which result when the disease is left to itself or improperly treated.

Dr. O. B. Douglas, of Suncook, opened the discussion on this paper, and said that it was well that we should know that the natural course of these symptoms was an inclination to suppuration of the middle ear; and that it was necessary to understand the anatomy of these parts before commencing an operation. He described the possibility of wounding the facial nerve and its sequence — facial paralysis. He advised the use of sterilized gauze after the complete sterilization of the parts; and incidentally mentioned that in the use of the pure carbolic acid it was only necessary to use alcohol immediately afterwards to prevent the destruction of the tissue by the acid.

Dr. N. E. Guillet, of Manchester, read a paper on

VAGINAL HYSTERECTOMY, AND WHEN INDICATED.

He described the manner in which this operation was done in the French hospitals, and advised that in many instances vaginal hysterectomy instead of laparotomy should be performed.

Dr. F. A. Stillings, of Concord, in opening the discussion on this paper, said that hysterectomy is never indicated except after the microscope has shown that the patient is suffering from cancer; then after the diagnosis is fully determined, the question to be decided is what operation can we do with the most certainty of removing the entire disease. In his opinion abdominal hysterectomy was preferable to vaginal hysterectomy in cases of that kind.

Dr. J. M. Gile, of Hanover, presented a paper on

TUBERCULAR DISEASE OF THE URINARY APPARATUS.

He said the disease was not necessarily of short duration, but similar in its results to that of tubercular deposits in other parts of the body. He urged that careful diagnosis be made with the aid of the microscopist and bacteriologist. Like tubercular disease of the lungs it may prove to be rapidly fatal or run an indolent course.

Dr. H. L. Kingsford, of Hanover, described the methods of

INOCULATION OF ANIMALS AND THE RESULTS OBTAINED.

Dr. A. W. Shea, of Nashua, reported

CASES OF MULTIPLE PREGNANCY.

He gave statistics which showed that there were nine cases of multiple pregnancy out of seven hundred reported.

Dr. Edmund E. Hill, of Suncook, reported

A CASE OF PUERPURAL ECLAMPSIA WITH COMPLICATIONS.

The case was interesting in the fact that the patient had a temperature of 99° to 103° during the whole illness, being confined near the first of May and dying June 12th.

Dr. Walker, in discussing the paper, corroborated the statements of Dr. Hill, and gave it as his opinion that the eclampsia was the result of disease of the kidneys.

Dr. A. C. Heffenger, of Portsmouth, read a paper on

HEMOSTASIS IN INTRAPELVIC SURGERY,

reporting his personal experience in operations involving intrapelvic tissues, and basing his conclusions upon his observations in fifty-four cases. The key-note to success in intrapelvic surgery is absolute control of hemorrhage, and in his practice the use of properly sterilized catgut is preferred to that of silk or tendon suture. Each step of the operation was illustrated by crayon drawing.

Dr. E. F. McQuesten, of Nashua, in discussing this paper, said that death by hemorrhage can be averted, other causes cannot, therefore it is important that any one attempting the operation should thoroughly understand the anatomy of the pelvis, and should always be certain that he has control of the possibility of hemorrhage.

Dr. John D. Quakenbos, of New London, read a paper on

POST-HYPNOTIC SUGGESTION IN THE TREATMENT OF SEXUAL PERVERSIONS AND MORAL ANESTHESIA IN THE YOUNG.

He gave his personal experience in the use of hypnotism in such cases. An abstract of this would fail to do justice to the paper.

This was discussed by Dr. W. T. Smith, of Hanover, and Dr. J. H. Neal, of Rochester.

Dr. William Varick, of Concord, read a paper on

EYESIGHT OF SCHOOL-CHILDREN.

It was discussed by several medical gentlemen present and by Mr. L. J. Rundlett, superintendent of the schools of this city.

Dr. Russell Wilkins, of Concord, read a paper on

THE MEDICAL PROFESSION AND THE STATE LIBRARY.

He described the advantages to be obtained by having a large and well-appointed medical library under the care and direction of the State Librarian in this city.

The discussion of the paper was opened by Dr. Parker, of Concord, and participated in by the Librarian of the State Library and various others who were interested in this work.

During the evening of the first day, the profession in Concord united in entertaining the Society. Through the efforts of the Committee of Arrangements, J. Milnor Coit, Ph. D., of S. Paul's School, was secured to give a very interesting lecture on the properties of

LIQUID AIR,

which was illustrated by stereopticon views. A large audience enjoyed his lecture very much, at the con-

clusion of which the members of the Society and their friends were entertained by the profession in Concord for an hour or more at the New Eagle Hotel.

Other papers were read by title, referred to the Committee on Publication and will appear in the *Transactions*. The report of the Council was read and approved. The report recommended thirty new applications for membership, of which over twenty were present and signed the constitution, and the others were given until the *Transactions* are ready for press to complete their membership.

The following officers were elected: President, Charles R. Walker, M.D., Concord; Vice-President, William T. Smith, M.D., Hanover; Treasurer, M. H. Felt, M.D., Hillsborough Bridge; Secretary, Granville P. Conn, M.D., Concord. Executive Committee: Dr. F. A. Stillings, Concord; Dr. George D. Towne, Manchester; Dr. W. T. Smith, Hanover; Dr. F. E. Kittredge, Nashua; Dr. Ira J. Prouty, Keene; Dr. A. C. Heffenger, Portsmouth; Dr. G. W. McGregor, Littleton. Anniversary Chairman, Dr. M. S. Woodman, West Lebanon; Necrologist, Dr. John J. Berry, Portsmouth. Committee of Arrangements: Dr. D. Edward Sullivan, Concord; Dr. F. W. Grafton, Concord; Dr. Sibley G. Morrill, Concord; Dr. A. K. Day, Concord; Dr. George H. Parker, Concord.

A council of twenty members and a board of censors, consisting of ten members, were also elected.

At 12 o'clock the President delivered his Address, which was an able and interesting paper, in the course of which he touched upon various evils of social origin, and in graphic language showed that there was a work for philanthropists and reformers outside of temperance agitation.

At the close of the President's Address, the Society adjourned to the New Eagle Hotel, where the anniversary dinner was presided over by the Chairman, Dr. A. W. Shea, of Nashua. The Governor of the State was represented by Surgeon-General F. A. Stillings, who responded to the sentiment, "Military Surgeons of New Hampshire." The profession of law was represented by HON. J. J. DOYL, of Nashua. "The Clerical Profession" had a most eloquent response from the Chaplain, Rev. John Vannevar, of Concord, and "Women in Medicine" was happily responded to by Dr. ELLA BLAYLOCK-ATHERTON, of Nashua.

At the close of these exercises the Society adjourned to meet in Concord, May 31 and June 1, 1900.

AMERICAN MEDICAL ASSOCIATION.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN. MEETING AT COLUMBUS, O., JUNE 6, 7, 8 AND 9, 1899.

(Concluded from No. 4, p. 83.)

DR. M. ROSENWASSER, of Cleveland, Ohio, read a paper on

EARLY OVARIOTOMY; ITS PRACTICAL NECESSITY.

The motive of the author was to bring more prominently before the profession the many accidents and complications that happen with small as well as with recent growths of this kind. Neither the size nor the age of the tumor is a criterion of the possible immediate or remote dangers from its presence. In order to emphasize the special points to which attention is called, he gave a brief synopsis of a few typical cases selected to exemplify the various complications that may arise in the early stage of ovarian cystoma, or that may result from delay. His conclusions were as follows: (1) uncomplicated ovariotomy, in proper hands, is a simple operation with scarcely any risks; (2) malignancy, trauma, torsion of pedicle, infection, suppuration, adhesion to viscera, and pregnancy materially increase the difficulties and risk of the operation; (3) to avoid complications liable to occur at any time, the removal of ovarian growths should follow the diagnosis without unnecessary delay. Let the terse axiom, formulated by Dr. Howard Kelly, henceforth be the recognized rule of procedure: "From a practical standpoint all ovarian tumors must be considered as malignant until removed and proved otherwise."

In discussion, DR. C. P. NOBLE, of Philadelphia, thinks that all tumors should be removed. He had operated on four cases of tumors with twisted pedicles during the past winter. The danger of suppuration occurring makes immediate operation important and often imperative. The consensus of opinion in the discussion was entirely in favor of early operation in all instances of advanced neoplasms.

DR. ELIZA H. ROOT, in a paper entitled

STUDY AND TEACHING OF OBSTETRICS IN OUR MEDICAL SCHOOLS,

discussed the dangers of childbirth, and advocated more thorough teaching of obstetrics. The teacher must be enthusiastic, earnest and studious. Every case must be studied, and all points of interest elucidated for the benefit of the student. The diameters of the pelvis, the use of the pelvimeter, and abdominal palpation, as a means of diagnosis, should be thoroughly taught. Embryology, as a preparatory study, and later the mechanism of labor and the care of the puerperal woman should be taken up. Manikin drill is indispensable. Abnormal positions, and the management of these, should be gone over slowly. Finally, obstetric surgery and safe knowledge of the forceps should be instilled. All traction with forceps should be used in direction of the pelvic axis. Practical work should be done and recorded before graduation.

In discussion, the importance of thorough obstetric teaching was reiterated.

DR. W. W. GRANT, of Denver, Colo, in discussing

THE PROPHYLAXIS OF UTERINE CANCER,

said he considers that the field of preventive surgical disease is as interesting a study and imperative a duty as preventive medicine is to the general practitioner and sanitarian. This is particularly true in the study of malignant conditions. He quoted the methods of Dührssen and Kelly in treating these suspected cases. Grant says the only safe course is to repair every appreciable lesion of the cervix, without waiting and looking for evidence of either benign or malignant disease. Trachelorrhaphy is not a dangerous operation. With all of the cicatricial and diseased tissue removed, the lips well adjusted and united, the most common condition and cause of cancer of the cervix is eliminated. The desirability of medical supervision during the climacteric, and even before, must be admitted by all in order to meet certain diseased conditions promptly.

DR. A. LAPTHORN SMITH, of Montreal, Canada, read a paper on

THE PREVENTION AND TREATMENT OF CANCER OF THE UTERUS.

He believes that uterine cancer is not a hereditary disease, but that it is a contagious disease, probably due to a microbe which does not flourish in healthy tissue, but which luxuriates on tissues of low vitality, such as cicatrices, or in women whose whole vitality is below par. He knows of three cases of cancer occurring in nurses attending patients who died of cancer, and there was no trace of cancer in the family history of any of them. When the contagiousness of cancer is more fully recognized it may yet be possible to stamp it out by isolation of the patients. All lacerations of the cervix should be repaired. If cancer is detected early, while still limited to the angle of the tear or to the mucous membrane of the uterus, total extirpation will usually be followed by cure. If further advanced and the organ is firmly fixed and the disease has extended to the broad ligaments the author prefers to make a thorough curetting and to apply pure carbolic acid to the mucous membranes and then to perform Schroeder's amputation of cervix, which will prolong life.

DR. E. E. MONTGOMERY, of Philadelphia, in a paper,

DOES REMOVAL OF THE OVARIES EXERT A BENEFICIAL INFLUENCE ON THE SUBSEQUENT PROGRESS OF MALIGNANT DISEASE?

discussed the value of oöphorectomy in the treatment of malignant disease of the mammary gland, and the theory that the presence of the ovaries exerts an inhibitory influence on the development of such disease. If the patient is liable to the genesis of cancer when inhibition is partially removed, will she not be much more subject to its ravages when inhibition is entirely destroyed? This theory logically would contraindicate rather than render advisable the removal of the ovaries for malignant disease. The ovaries may exert an influence upon the circulation in the vicinity of the reproductive organs through the vasomotor system, and a careful consideration of the subject forces him to the conclusion that the apparent relief is afforded through the vasomotor system. Further experience is required to demonstrate not curability but sufficient palliation and delay in the processes of disease to compensate the patient for the discomfort of the additional operation. Such an operation will only be of service if done during reproductive activity.

In discussion, DR. FREDERICK HOLME WIGGIN said he believes that trauma plays an important part in the etiology of cancer, and that soon it will be proved to be an infectious disease. A common error is the belief that cancer will not develop until after menopause. Patients should know that the period of danger is between the ages of forty and fifty years. All menstrual irregularities should be considered as an indication for local examination. He condemns microscopic examination long before the time of operation, as the rapidity of the growth is increased.

DR. GOLDSPOHN thinks that Emmett's operation of trachelorrhaphy is not sufficient, as only the superficial tissue is removed, and that amputation of the cervix by Schroeder's method is the best.

DR. RIES thinks that it is a mistake to consider that laceration of the cervix is the causing factor in carcinoma. He agrees with Montgomery that removal of the ovaries is useless in cancer of the breast. It is folly to think of doing oöphorectomy on everything, from corns to headache.

DR. BONIFIELD thinks laceration of the cervix predisposes to cancer by prolonged congestion and irritation.

DR. MITCHELL thinks cancer rarely occurs in women who have not borne children or been the victims of abortion. He noted the rapid increase in the frequency of cancer.

DR. GILLIAM does not think the family physician is competent to determine the presence of cancer, and that each should be submitted to the expert for diagnosis. He thinks it is not laceration but the traumatism that is the etiologic factor.

DR. H. A. KELLY thinks we know nothing about the etiology of cancer. He does not think that microorganisms are responsible for the disease. What we want is a *modus vivendi* — something to do pending the settlement of the question of causation. Careful study of injuries of the cervix produced by childbirth should be made. Every case of atypical hemorrhage should be investigated. Microscopic examination of scrapings or a fragment of tissue can be done in fifteen minutes, or while the patient is under anesthesia. He has abandoned the radical operation with extirpation of the glands as being impracticable, too difficult and dangerous, and without good results. Uterine bougies should be inserted to aid in doing more thorough work. He considers the analogy between cancer of breast and the uterus is an erroneous one.

DR. MONTGOMERY believes that at present we do not know the cause of cancer. He thinks cancer of the body occurs in 10 per cent. rather than only two per cent., as usually stated in text-books of cases of cancer of uterus. By examining patients more frequently, as a rule, the general practitioner would soon gain the knowledge necessary to make early diagnosis. Intrauterine examination also should be practised in doubtful instances, the uterus dilated, the finger introduced, and cavity explored. Infection of the wound is often due to a secondary infection, and every precaution should be taken to avoid such infection.

DR. HENRY P. NEWMAN, of Chicago, read a paper on

EXTIRPATION OF THE UTERUS, ITS APPENDAGES, TUMORS, ETC., WITHOUT LIGATURES OR RETENTION CLAMPS; DEMONSTRATION OF A NEW INSTRUMENT FOR HEMOSTASIS, WITH A REPORT OF CLINICAL CASES.

The prime object of the angiotribe which he described is to produce absolute hemostasis and do away with ligatures or foreign bodies in the operative field. The medical profession has been struggling with this problem for a long time. It is apparent to all that the ligature is not ideal or even desirable, constituting, as it does, a foreign body, always in the nature of a complication in surgical wounds. The ecraseur was one of the early manifestations of an epoch to do away with the time-honored ligature. Its revival, in a modified form, is not without some merit. The clamp and cautery have held their place in surgery for a considerable period, and in spite of some advantages always claimed for the ligature in hemorrhoidal operations, it is probable that the cautery operation is still done an equal number of times by the ligature method. The retention clamp, likewise, has been a life-saving substitute

for the ligature, and has been a means of revolutionizing pelvic surgery, notwithstanding it is now giving way to better devices. The many methods of perfecting the absorbable sutures both in material used and manner of preparing only go to show that the profession is fully alive to the importance of doing away with the conventional ligature and suture. The Keith-Skene electric heat and Doyen crusher are among the latter methods that bid fair to solve a long-sought problem. It must not be understood that the leaving of foreign bodies in the wound is the only objection to the ligature, while it must be conceded that it is an all-important argument against its use. Other vital objections still remain: (1) Uncertainty as to slipping; (2) uncertainty as to asepsis; (3) shrinkage in the stump, thereby loosening the constricted vessels; (4) bunching together tissue, and thereby dragging upon and displacing neighboring structures. He recognizes that in the individual ligation of vessels some of the above objections would not apply; but this very desirable method of using the ligature is not always possible, or at times advisable. Again, the over-towering advantages of its substitutes (here particular reference is made to the Keith-Skene and Doyen methods) apparently leave little room for argument: (1) Immediate and absolute hemostasis; (2) perfect antisepsis; (3) an undisturbed stump, for example, no bunching of pedicle or dragging from neighboring structures; (4) the operative field free from foreign body; and (5) with the improved instruments recently constructed by Dr. Newman, promptness of execution and adaptability to nearly all tissues and surgical work.

Dr. Newman then gave the general outlines of the instrument and exhibited many cuts. His modification differs from the Thumin instrument in having longer blades, enabling the operator to include the entire broad ligament or large pedicle at a single application. The blades are narrower, so that less space is required in their adaptation to the part, and they can grasp shorter pedicles, or even sessile growths, with greater facility. At the end of one of the blades is a slightly projecting bite preventing the grasped tissue from extending beyond the blades, as it is apt to do in closing the Thumin instrument. A new or modified Thumin lever has been added to the instrument as a separate attachment. A combination mortise lock allows of an interchange at will of the lever, in applying the compression force, to that of the cross-bar and screw. While the cross-bar and screw will be found most desirable for general use, the lever has great power of compression and can be applied with a single motion or movement of the hand. This new or modified lever not only has the interchangeable lock in common with that of the cross-bar and screw referred to, but is simple in construction and adaptation, and allows of much wider separation of the blades during their application. The Thumin lever requires a partial closure of the blades and necessarily previous engagement of the pedicle or tissue to be clamped before adjusting the lock. This obstacle is overcome by the Newman instrument. Dr. Newman reports 16 cases successfully treated with the aid of his new instrument.

Dr. W. C. Bowers, of Decatur, Ala., in a paper on

NECESSARY ABORTION,

detailed the varied indications for the performance of necessary abortion. The reasons for premature emptying of the uterus are many, but fortunately very few of them act with any degree of frequency, and the indications are rarely absolute. Nephritis, advanced tuberculosis, aneurism, valvular lesions of the heart, chorea gravidarum and peripheral neuritis of pregnancy were among the indications mentioned. Probably the most common reason for interrupting pregnancy is hyperemesis gravidarum, which should not be allowed to proceed to extreme exhaustion. Pain beneath the sternum, and coffee-ground vomiting are other causes. To be pathologic the nausea must persist after the patient has arisen or be experienced when the patient is in the recumbent position. Several cases were reported illustrative of the subject discussed.

Dr. C. L. Bonifield, of Cincinnati, read a paper entitled

TREATMENT OF PATIENTS AFTER ABDOMINAL SECTION.

He considers spartein sulphate of decided value as an immediate stimulant to the heart, while digitalin may be used for a more lasting effect. The physiologic action of alcohol is so nearly identical with that of ether and chloroform that its utility is to be doubted when the system is saturated with one of these agents. Calomel is the most generally satisfactory purgative. He thinks the rectal tube is of little value for the relief of gaseous distention. Morphine constipates the bowels, checks elimination and almost always produces more or less nausea. In its place he uses codeine phosphate and chloral hydrate by the rectum for the relief of pain. To relieve the intolerable pain he employs the rectal injection of normal salt solution, a half-pint being given every two to six hours. A half-ounce of very hot water by the mouth may be allowed every hour after the first four. Bonifield considers that any surgeon who does a capital operation owes it to his patient, his profession and himself to see that everything possible is done to secure recovery. For this reason, only when it is absolutely unavoidable should an abdominal section be done in the country and the after-treatment left to a practitioner inexperienced in this work.

Dr. D. T. Nelson, of Chicago, described

THE NATURE, CAUSATION AND TREATMENT OF SHOCK.

Dr. Frederick Holme Wiggin, of New York, read a paper on

ACCIDENTAL WOUNDS OF THE FEMALE BLADDER.

While accidental wounds of the bladder occurring in the course of operations are to be deplored, and guarded against by every possible means, when they do occur the knowledge of their existence is of the utmost importance, for, as soon as discovered, they may be treated much in the same manner as simple incisions in any other part of the body. The fear of septic peritonitis has prevented a general application of this fact, but the labor of American gynecologists in proving the safety of closure of abdominal openings without drainage, even when infection is known to exist, has done much to establish on a firm basis immediate suture of wounds of the bladder. There is no more reason why a recent intra-abdominal wound of the bladder should not be sutured and the abdomen closed without drainage than in the case of a wound occurring in the bowel.

FOURTH DAY.

Dr. W. Tod Gilliam, of Columbus, read a paper on

WHAT SHALL WE DO WITH THE UTERINE FIBROID?

He detailed the history of the attitude of the profession towards these growths and painted a graphic word-picture of instances in which tragic consequences on one hand, and beneficial results on the other, had followed surgical intervention for these neoplasms. He believes that the unoffending fibroid should be let alone, unless it is a menace to life, health and happiness, when it should be removed. He argues for greater circumspection and more conservatism on the part of the surgeon. Let the smaller and less mischievous growths alone; they may or may not give trouble in the future; ten to one they will not, but if they should, it will be time enough to consider them when the exigency arises. It is the patient's prerogative to decide. It is a right vested in the human race to incur risk for the betterment of its condition, and women should have the same priceless privilege after a thorough understanding of the condition and the danger of an operation.

Recent Literature.

Urinary Analysis and Diagnosis. By Louis Heitzmann, M.D., New York. New York: William Wood & Company. 1899.

In this book four-fifths of the space is devoted to the study of urinary sediments in their relation to diagnosis of disease.

The author has a great deal to say in regard to the character of the various cell elements found in urine and of the importance of these cell findings for diagnosis. We do not agree with the pathologists who state that the character of the cells in a urinary sediment is of no value as an aid to the localization of an inflammatory process in a given case. On the other hand, we do not believe that this localization by specific cell findings is possible in the extent which Dr. Heitzmann claims for it.

To diagnose cystitis in a male by the finding of squamous cells with pus, or prostatitis, by neck of the bladder and prostatic cells, is proper, but to diagnose nephritis (catarrhal nephritis) by the finding of small round epithelial cells and leucocytes, independent of the presence of casts, is not. The small, round epithelial cell, to which type the renal cell belongs, may come from several parts of the urinary tract. These cells cannot therefore be called renal cells or the condition in which they are found diagnosed as an inflammation of the kidney unless they are associated in the sediment with casts or definite evidences of renal disease.

A Bacteriological Laboratory for Dublin. — A government bacteriological laboratory for Ireland is to be started in Dublin.

Philadelphia Hospital. — Dr. Henry W. Cattell has been elected pathologist to succeed Dr. John Guiteras, who recently resigned.

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283 Washington Street, Boston, Mass.

THE STUDY OF TROPICAL DISEASE.

It is becoming more and more apparent that our new interests in tropical countries are forcing upon us not only questions of great political moment, but also numerous problems and responsibilities in the field of medicine. These responsibilities England has long realized in relation to her colonial possessions, with the result that admirable work is continually being done by skilled investigators toward the solution of the problems which tropical diseases offer. Within a year there has been published in London a journal devoted to the study of diseases peculiar to the tropics, and a school has been established whose function it is to fit men for the special medical duties which residence in tropical countries implies. Whatever the merits of the sword may be as a means of civilization, there certainly can be no question that the establishment of hospitals and research laboratories is a distinct mark of progress, which should by all means be encouraged. To see what has already been accomplished we have but to look at the work of the English in India toward combating the prevalent epidemics peculiar to that country. Apart from any definite results as regards etiology, the mere fact that men are in the field who are quite willing to risk their lives in their attempt to get at the fundamental causes of these devastating diseases has an immense moral effect upon the community in which they are working, and upon the world at large. The moment a problem is grappled with, it loses much of its terror. In the case of epidemic disease there can be no question that much of the distress results not so much from the inherent fatality of the disease as from the widespread fear which it engenders among people ignorant of its nature. It requires no great effort of memory to recall the panic, even among well-informed people, which the word "cholera" excited in our own highly civilized communities not many years ago. The fire is never so much to be feared as the wholly unreasoning panic which it is so likely to excite. It was our fortune to be in Berlin during the prevalence of cholera in the neighboring city of Hamburg a few years ago.

It was interesting to note that with all the subdued sense of fear which prevailed, there was an underlying feeling of security that man was, after all, master of the situation, as the event amply proved. It is this sense of relative security and freedom from the demoralization of panic that is always the precursor of progress in the study of epidemic diseases. This has long since been accomplished in regard to all indigenous diseases, from typhoid fever to cholera and small-pox. So far as our own country is concerned, yellow fever even has none of the terrors which were its inevitable accompaniment a few years ago. All this is due to the growth of knowledge. Modern scientific medicine has given us a clue which at least dissolves the mystery surrounding these affections, and opens a wide path of profitable research.

It is clearly evident, however, that with all that has been done in the past, much more remains for the future. Up to this time the United States has held a somewhat unique position in its relation to alien diseases of the character under discussion. We have not had an opportunity heretofore to study them adequately at their source. That opportunity has now come, and there is reason to suppose that it will not be neglected. Even during the continuance of the war with Spain valuable studies were made in relation to the pernicious fevers of malarial type which our soldiers contracted in Cuba. Enough was learned to whet the enthusiasm of the scientifically disposed to a more adequate and complete study of this and allied disorders. As one of the first results of this enthusiasm, we have recently seen an expedition sent from the Johns Hopkins Medical School to the Philippines for the purpose of making a study of diseases prevalent there. That others will follow there can be no question, and we may certainly look for results which sooner or later will have a distinct effect upon the health, and hence civilization, of the islands.

What has already been accomplished in Cuba, through the untiring energy of General Leonard Wood, we are all familiar with. The report comes as we write that yellow fever has practically been wiped out of Santiago, which should be a source of congratulation not only to the chief agent of this triumph, but also to the country he so ably represents. Brilliant as this success is, we need to go deeper, and probe out, if possible, the sources of the disease and all the conditions under which it originates and flourishes.

Such results can only be obtained by systematic work, extending over considerable periods of time and conducted by highly trained specialists. Were adequate arrangements made we have no question that men thoroughly qualified could be found in abundance, who would be quite willing to undergo the hardships and possible dangers which life in a tropical or semi-tropical country would involve. Here is evidently an opportunity for a true university extension movement, and it is a work which, to our mind, the universities with medical departments might, with great profit, assume. It would be quite possible to establish stations in Cuba, for example, to which might be sent accredited representatives of a university, for the purpose of working out some of the many medical problems which the tropics afford. Such a plan, which would appear not difficult of execution and not of necessity costly, would do much to hasten the time when diseases now dreaded because not understood would be in great measure preventable. To arrive at an adequate prophylaxis evidently means much painstaking study on the spot. With that possibility opened by the establishment of laboratory research stations, we are confident that yellow fever and other conditions, so inimical to health and life in those countries, would be, in due time, relegated to the growing category of preventable diseases.

AS TO CREMATION.

Popular feeling is evidently changing with regard to cremation. Statistics of the last few years show a constantly increasing number of establishments, for the most part connected with cemeteries, where the process of incineration may be carried out. This has been due to an improved public opinion and to the partial lapse of the superstitious point of view to which civilized peoples in this matter have so long been slaves. The strong impulse given to burial by the church has gradually given way to a more liberal conception, which sees in the disposal, by burning, of the human remains nothing inimical to religious ideals.

In addition, however, to this deeply rooted sentiment regarding the immediate destruction of the body after death, there can be no doubt that there is a strong personal feeling that finds comfort in burial, and imagines, at least, it will experience added pain in the rapid destruction of the body. This is no doubt a mere sentiment, engendered and fostered by centuries of custom. That it will finally give way entirely to more rational feelings appears likely. If we permit ourselves a moment to think of the conditions after death of the buried body, we are forced to recognize the unesthetic side of the whole matter, quite apart from considerations of hygiene and public health.

An interesting, if unpleasant, paper was published recently in *Public Health* and quoted in the *Journal of Tropical Medicine*, which brings home to us forcibly the situation. In speaking of soil used for burial purposes, the writer says:

"The suitability or otherwise of a soil for the site of a cemetery depends on the same conditions, — namely, the presence or absence of nitrifying bacteria, its permeability to air, and its humidity and drainage — that determine its fitness or unfitness for the treatment of sewage. In the one class of soils bodies undergo dessication, and the soft parts "return to dust" in the course of a few years; in the other they putrefy, and instead of decomposition and disintegration they remain for years — in fact for indefinite periods — festering masses of corruption. An official

inquiry in Germany some years ago showed that in the "loess" four years sufficed for the disappearance of everything but the bones and hair, whereas in stiff wet clays the bodies still presented stinking, putrid masses; and in excavating the churchyard of St. Andrew's, Holborn, pre-eminently a "dead" earth, there was little difference to be seen between the interments of twenty and of two hundred years previously. Yet with few exceptions the situation of the cemeteries around London makes it clear that, whatever considerations determined the choice of the localities, the nature of the soil was not taken into account."

What is true of London is, no doubt, though possibly to a less degree, true of cemeteries everywhere, established many years ago. These facts should be borne in mind, and should certainly have influence in leading to a wider adoption of cremation as a method of disposing of the dead. To the sentimentalist nothing could exceed the repulsiveness of the idea of a putrefying body remaining for years undecomposed into its primitive elements, while to the sanitarian such a possibility brings up visions most unpleasant to contemplate.

The expense of cremation at present stands somewhat in the way of its more universal adoption, but we have no doubt that with a larger demand more adequate means at smaller cost would quickly be provided. We trust the day may be not far distant.

A CLOSER RELATION BETWEEN MEDICAL PROGRESS AND THE GENERAL PRACTITIONER.

Improved methods of medical practice come very slowly into general use. When we hear addresses on recent progress in medicine, we are apt to think that every one will have the benefit of this knowledge, which has become common property by being published to the world. In reality, however, it takes a long time before the community as a whole is benefited by advances in medicine. For example, we hear much about the value and importance of the microscope in modern medicine. Clinical microscopy is held to be one of the great advances made in modern medicine, and yet outside of our large cities how few of our citizens have any benefit from progress made in this direction. The x-ray is another illustration of the failure of our community to reap the advantages of progress in medicine. Although recognized as one of the great discoveries of medicine, very few of our citizens outside of our large cities have the benefit of the x-ray when through accident or disease they might be helped by its use.

Can anything be done to more quickly bring into general use new methods of medical practice? We believe that more might be done through our medical societies and more also by our boards of health. It is of the latter only that we wish now to speak.

Our boards of health have already done a great deal in this direction. The free examination of diphtheria cultures, of sputum for tubercle bacilli, of the blood for the plasmodia malariæ is being used by practitioners in remote country districts. Those practitioners are not merely being helped in the diagnosis of these diseases but they are learning the value of the laboratory and the microscope. Their quick appreciation of these examinations shows that they are ready to employ modern methods if it is possible for them to do so, and that if the facilities for the use of other examinations were to be offered to them, these also would be employed.

All over the State of Massachusetts local boards of health are establishing their own laboratories for the making of the free examinations which we have mentioned. In at least one town, Brookline, the examinations made in the Board of Health's laboratory are not confined to those which aid in the diagnosis of contagious diseases. Chemical and microscopical examinations which aid in the diagnosis of other diseases are also made, and are already availed of. As these examinations concern the health of the individuals and not of the public, they are not and should not be free, but the cost should be borne by the individual for whom the examination is made. At the Brookline laboratory urinary analyses, blood examinations, examinations of contents of the stomach, etc., are made for a fixed fee.

In the same way in those communities where there is no x-ray apparatus to which the practitioners can have access, it is suggested that the local board of health might have an outfit for the use of the physicians, the expense here also being borne by those patients who have the benefit of it. One of the cities of Europe, to our knowledge, has an establishment with an x-ray outfit, to which any of the physicians can bring their patients.

Paternalism or socialism in medicine should be guarded against, but where a community would otherwise be without methods of medical practice which have been proved to be of great value, more might be done than is now done to secure for the community the benefit of these methods. We should not merely try to extend by research our knowledge of medicine but should also strive to secure for our citizens the benefit of such knowledge already obtained. The value of any medical discovery is proportional to the use that is made of it, and the experiment now in progress at Brookline will be watched with interest.

MEDICAL NOTES.

Professor Sanarelli to Visit America. — It is reported that Professor Sanarelli is about to visit the United States to study the effects of his serum in the treatment of yellow fever.

A Centenarian. — Mrs. Phœbe Doty Hedges, residing between the borough of New Providence and Summit, New Jersey, is reported to have celebrated her one hundred and first birthday.

A Sign of Progress. — It is reported that Dr. Dupont, of Paris, is collecting by the phonograph the different cries of the insane, paralytic, epileptic, idiotic, and of those in various deliriums.

Appointment of Professor Brissaud. — It is announced that Professor Brissaud has been appointed to the chair of history of medicine and surgery at the Paris Faculty of Medicine.

A Numerous Progeny. — It is stated that a French-Canadian woman, twenty-eight years of age, recently gave birth to her third pair of twins in three years. Both father and mother were also one of twins.

A New Neurological Society. — We learn from *Science* that a neurological society was formed in Paris on June 8th, with Professor Joffroy as President. The society will issue the *Revue Neurologique*, which will appear on the 15th of each month.

Yellow Fever at Hampton, Va. — The outbreak of yellow fever in the Soldiers' Home at Hampton, Va., which at the date of writing had resulted in forty cases and eight deaths, is reported to have been brought under control. The probability of its having originated in the neighboring village of Phebus has been established. Norfolk is at present free from invasion.

Yellow Fever at Santiago de Cuba. — A letter we have just received from Gen. Leonard Wood, M.D., from Santiago de Cuba, says: I have just returned from the United States and find that we are having a little yellow fever here. The mortality amongst officers has been exceedingly high; all who have contracted the disease up to date have died. The total mortality has been about 25 per cent. I believe that we have the epidemic under good control and that we have seen the worst of it.

Asylum for Insane Indians. — As stated in the *Medical News*, the asylum for insane Indians at Canton, S. D., for which Congress made an appropriation of $42,000, with an additional $3,000 for the purchase of ground, will soon be erected. Out of 250,000 Indians in the United States there are only 58 who are insane, one doubtful, six idiotic and two partly idiotic. It would seem, then, that the simple physiological life of the barbarian has some advantage over the brain-paralyzing existence characteristic of civilization.

A Memorial of Sir Thomas Browne. — A movement is on foot, according to the *Medical Record*, for the erection in Norwich, Eng., where he resided for a period of forty-six years, and in which city he died in 1682, of a memorial statue of Sir Thomas Browne, the author of "Religio Medici." While excavating a grave in the chancel of St. Peter's some years ago, a coffin was broken open, which proved to be that of Sir Thomas Browne, the skeleton being in good preservation, and the hair of the beard very profuse.

Christian Science Legalized. — We learn from the *Journal of the American Medical Association*, that under the new medical act, "Christian Scientist healers," are, for the first time, given a legal status in Illinois. The act contains the following clause explicitly prohibiting interference with them: "This act shall not apply to any person who ministers to or treats the sick or suffering by mental or spiritual means without drugs or material remedy." Under this act the "Christian Scientist" has full right to practise without supervision or control by any authorities.

An American Surgeon Honored. — As an illustration of the interest which European surgeons are taking in the work of their American colleagues, we learn from the *Philadelphia Medical Journal* that Professor Kocher, of the University of Berne, extended the courtesy of his clinic to Dr. W. S. Halsted, of Johns Hopkins, July 7th. Dr. Halsted performed his operation for hernia, demonstrating his method to the originator of one of the most famous operations for this class of surgical cases. The case proved to be one with a deficiency of the conjoint tendon and particularly favorable for Dr. Bloodgood's transplantation of the rectus muscle, which was done. Dr. Kocher was especially impressed with the resection of the veins of the cord and the precaution against hemorrhage, in order to prevent pressure on the vas and consequent atrophy of the testicle.

"Non-Combatants" in the Philippines. — *Freedom*, an American paper published in Manila, under date of May 1, 1899, has the following item: "Members of the hospital corps have all been supplied with Krag-Jorgensen carbines. Incidentally it is noticed that they have removed the red cross from their uniforms. It is not compatible with United States soldiering for men wearing the red cross to be armed, as with that insignia they are supposed to be non-combatants. The Filipinos, though, have refused to notice hospital-corps men as such in this war and several times have wantonly fired upon them. Hence the carbines." In another column of the same issue, in referring to the attack on Malolos, the paper says: "Dastardly and cowardly as usual, Filipino sharpshooters secreted themselves where they could shoot the Oregon wounded under the tree where Captain Brosius, assistant surgeon, was working. This bestial practice was carried on nearly all day also at the dressing station where Major Ellis and Assistan tsurgeon De Mays were engaged. Private Clark, of Company A, was brought in with a broken arm and while Hospital-attendant Bollan was lifting him from the stretcher Clark was shot through the spine and died a few moments later. Another shot cut Bollan's canteen strap. Privates Peel and West of the hospital corps were each shot through the head. Filipinos dearly love to shoot or mutilate the wounded and hospital attendants. It is according to their ideas of valor."

FIRST RESERVE HOSPITAL IN MANILA. — Recent unofficial reports from Manila, dated early in May, state that this hospital is located in the walled city, or "Old Manila." The buildings, made of stone, are large, roomy, well lighted and ventilated. The grounds have many shade trees, tropical flowers and plants, large walks and driveways. A few tent-wards prevented overcrowding and gave plenty of room to each patient. There were at the time of writing 22 wards with a total of 960 patients, a majority being wounded. Since the outbreak of the insurrection, 932 cases of gunshot injuries had been treated at this hospital. A large number of these were but slightly wounded, and these, after receiving attention and being permitted to rest for a few days, were soon returned to duty — usually at their own request. The number of wounded remaining on May 1st was 430. There had been since February 5th a total death-list of 193 from wounds received in action. The patients are given careful attention and scrupulous cleanliness is maintained. The drinking-water is all distilled, the hospital owning its condenser and ice plant. Since the insurrection 260 wounded insurgents have been treated at this hospital, receiving every attention. The hospital-corps men have worked hard and deserve great credit for the excellent results obtained. The hospital is under the command of Major W. D. Crosby, U. S. Army. The patients are cared for by a large staff of medical officers, 11 hospital stewards, 20 female nurses and 160 privates of the hospital corps.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, August 2, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 59, scarlet fever 34, measles 7, typhoid fever 22.

QUARTERLY MEETING OF MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH. — The quarterly meeting of this Association was held July 27th at Gallop's Island, Boston Harbor. Dr. E. G. Cutler read a paper on "The Incubation and Infective Periods of Infectious Diseases."

NEW YORK.

A FATAL CASE OF RABIES. — A case of rabies of unusual interest terminated fatally at the New York Hospital on July 28th. The patient, Capt. George Bockhaven, master of the freight steamer *Corona*, and fifty-five years of age, was a man of unusual intelligence and self-possession. He was bitten in several places by a strange dog on June 12th, and the first symptoms of rabies appeared July 26th. At the Pasteur Institute a thorough test of the Buisson hot vapor treatment was made, and when it was found that this had no effect whatever upon the disease he was removed to the New York Hospital, where, as a last resort, a certain amount of blood was abstracted and a strong saline intravenous injection made, at the suggestion of Dr. Gibier. Up to almost the last moment the patient was perfectly cool and deliberate, and described his feelings quietly and intelligently.

AN OUTBREAK OF RABIES IN ERIE COUNTY. — A widespread outbreak of rabies among dogs, horses and cows is reported in Erie County by Commissioner Weiting, of the State Agricultural Department, and four persons who have been bitten by rabid animals there are now undergoing preventive treatment at the New York Pasteur Institute. The origin of the trouble has been traced to a large St. Bernard dog which ran for nearly forty miles, biting everything that came in its way, before it was killed.

TUBERCULOUS CATTLE. — An official inspection recently made of the cattle of Ex-Gov. Levi P. Morton, near Rhinecliff, on the Hudson, one of the most valuable herds of Guernseys in the county, showed that a large percentage of the animals, nearly sixty in all, were affected with tuberculosis.

TYPHOID FEVER IN FLUSHING. — At Flushing, in the Borough of Queens, which is said to have hitherto been remarkably free from this disease, there is an outbreak of typhoid fever. Over twenty cases, seven of which are now at the Flushing Hospital, with one death, have thus far been reported. Since last April the village pumping station has not furnished sufficient water to supply the demand, and the typhoid is attributed to the impure water of one or more ponds which have been utilized to supplement the supply.

STATISTICS OF TYPHOID FEVER. — The State Board of Health has been making a study of the increased prevalence of typhoid fever during the past year, and has found that in the small towns and rural districts, in which the disease is usually more prevalent than in cities, the deaths from typhoid were in 1898 at the rate of 174 in 10,000, against 149 in 10,000 in 1897. The cities of the State, however, do not all have a lower death-rate from the disease than the rest of the State, and the Board, in the tabulation of their mortality statistics, groups them for convenience into three classes: those having a death-rate below that of the rural districts, those having about the same rate, and those having a decidedly higher rate. In the first class are placed New York, Yonkers, Utica and Auburn; in the second, Buffalo, Rochester, Syracuse and Troy; and in the third, Albany, Elmira and Binghamton. In 1898 Rochester and Yonkers alone had a decrease, but in New York and Auburn the increase was slight. The most remarkable increase was in Troy, which for that year must be placed in the third, instead of the second class.

TWO CENTENARIANS. — Catharine Vidal, unmarried, a native of New York City, died in Mount Vernon, N. Y., on July 26th, at the age of one hundred. On July 23d Alice McMahan, a spinster, said to be one hundred and five years old, who emigrated from Ireland sixty years ago, sailed for her native land on board the Cunarder *Umbria*.

Miscellany.

POISONOUS PANTRIES.

It is very desirable that the conditions under which food may become poisonous should receive more practical consideration than they do. Dr. W. W. Stainthorpe, of England, has called attention to some glaring defects in the location of food storerooms, which are worthy of attention. In house construction the position of the pantry is too often treated as of minor importance. In some houses the space under the stairs or some equally unsuitable and inadequately lighted and ventilated place is thought good enough for the purpose. In a great number the pantry is a small offshoot from the house, the ceiling, floor and walls often being damp, owing to faulty construction; in some of these matters are rendered worse by the water taps being placed therein without any provision being made for carrying away the droppings from the tap or overflow from vessels into which the water is run. Frequently the closet — ordinary or pail — is only a few feet from the pantry window. One of the most frequent entries in his inspection note-book is "defective yard pavement," permitting of soakage of filth into the soil underneath, with all its evil consequences. — *Medical Record.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 15, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	—	—	—	—	—	—	—
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,340,226	482	201	23.94	10.52	15.12	1.89	4.20
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	198	90	19.89	7.65	11.22	1.53	3.57
Baltimore	506,389	245	134	45.10	5.33	41.41	.41	1.23
Cincinnati	405,000	95	—	10.60	15.90	8.64	2.12	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	132	65	35.72	3.80	26.60	3.04	—
Washington	277,000	136	60	28.86	11.36	22.94	—	1.48
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	48	20	31.20	4.16	31.20	—	—
Nashville	87,754	33	12	18.18	15.15	12.12	3.03	—
Charleston	65,165	34	16	17.64	5.88	5.82	5.88	—
Worcester	108,340	27	8	18.50	7.40	14.80	—	—
Fall River	95,919	62	51	43.47	8.05	40.25	1.61	—
Cambridge	89,724	22	8	29.05	20.75	29.05	—	—
Lowell	88,641	36	25	44.32	5.54	33.24	—	—
Lynn	66,703	15	2	26.66	—	6.66	6.66	—
New Bedford	66,340	21	14	33.33	9.52	19.04	4.76	—
Somerville	61,101	21	6	—	—	—	—	—
Lawrence	57,263	27	16	37.00	14.80	33.33	3.70	—
Springfield	56,801	26	8	38.46	15.38	26.88	—	—
Holyoke	43,424	17	9	52.92	23.52	41.16	11.76	—
Brockton	37,278	10	3	20.00	20.00	20.00	—	—
Salem	36,883	17	8	29.40	11.76	29.40	—	—
Malden	34,613	10	—	—	40.00	—	—	—
Chelsea	33,468	16	7	25.00	6.25	6.25	6.25	—
Haverhill	32,622	8	4	12.50	—	12.50	—	—
Gloucester	30,589	2	—	—	—	—	—	—
Newton	29,716	3	3	66.66	—	66.66	—	—
Fitchburg	29,438	6	1	16.66	—	—	—	—
Taunton	28,167	14	5	21.42	7.14	14.28	—	—
Everett	25,338	6	3	—	—	—	—	—
Quincy	23,549	1	1	—	—	—	—	—
Pittsfield	22,643	3	—	—	33.33	—	—	—
Waltham	21,812	9	3	33.33	22.22	33.33	—	—
North Adams	20,971	12	5	25.00	8.33	25.00	—	—
Chicopee	17,942	9	6	33.33	11.11	22.22	11.11	—
Medford	16,511	3	—	33.33	—	—	—	33.33
Newburyport	14,915	8	4	37.50	—	12.50	12.50	—
Melrose	14,032	3	—	—	—	—	—	—

Deaths reported 1,835; under five years of age 822; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 532, consumption 168, acute lung diseases 72, diarrheal diseases 405, diphtheria and croup 35, typhoid fever 34, whooping-cough 21, cerebro-spinal meningitis 19, scarlet fever 12, measles 4, erysipelas 2.

From whooping-cough Philadelphia 9, Pittsburg 4, Boston and Lowell 2 each, Nashville, Charleston, Lawrence and Chelsea 1 each. From cerebro-spinal meningitis Baltimore 3, Philadelphia, Boston, Washington and Somerville 2 each, Worcester, Lynn, Springfield, Chelsea, Fitchburg, Taunton, Newburyport and Amesbury 1 each. From scarlet fever Washington 3, Philadelphia, Pittsburg and Lowell 2 each, Baltimore, Cincinnati and Lynn 1 each. From measles Boston and Pittsburg 2 each. From erysipelas Baltimore and Washington 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending July 1st, the death-rate was 15.7. Deaths reported 3,427; acute diseases of the respiratory organs (London) 159, measles 110, diarrhœa 80, whooping-cough 79, diphtheria 71, scarlet fever 35, fever 28, small-pox (Hull) 5.

The death-rates ranged from 10.4 in Blackburn to 22.5 in Gateshead; Birmingham 15.4, Bradford 14.8, Cardiff 13 5, Hull 17.4, Leeds 14.4, Liverpool 21.5, London 14.9, Manchester 21.3, Newcastle-on-Tyne 14.5, Nottingham 12.9, Portsmouth 15.0, Salford 17.9, Sheffield 20.6, Swansea 13.1, West Ham 11.8.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending July 8th, the death-rate was 16.0. Deaths reported 3,496; acute diseases of the respiratory organs (London) 194, measles 133, diarrhœa 98, whooping-cough 85, diphtheria 81, scarlet fever 35, fever 24, small-pox (London) 6.

The death-rates ranged from 10.6 in Croydon to 24.8 in Mancher; Birmingham 12.9, Bradford 12.1, Cardiff 15.2, Gateshead 15.7, Huddersfield 17.6, Leeds 15.1, Liverpool 24.2, London 15.0, Newcastle-on-Tyne 16.6, Nottingham 17.0, Portsmouth 11.8, Sheffield 21.5, Swansea 12.1.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 22, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup.
New York	3,438,899	1539	863	26.28	9.24	19.68	1.14	2.28
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,340,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	249	124	28 40	8.00	24.40	.80	1.20
Baltimore	506,389	245	138	42.64	7.76	37.72	.82	1.64
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	110	59	29.70	1.85	18.90	3.60	2.70
Washington	277,000	115	45	18.06	13.76	18.06	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	69	33	34.80	11.60	30.45	1.45	—
Nashville	87,754	38	12	21.04	2.63	21.04	—	—
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,340	39	19	38.40	5.12	35.84	—	—
Fall River	95,919	63	51	44.10	5.88	41.16	1.47	—
Cambridge	89,724	27	17	40.74	10.85	43.40	2.17	—
Lowell	88,641	47	30	46.80	4.26	44.73	4.26	—
Lynn	66,703	12	2	29.05	4.15	24.90	—	4.15
New Bedford	66,340	19	9	15.78	21.04	10.52	—	5.26
Somerville	61,101	14	6	28.56	14.28	21.42	—	—
Lawrence	57,263	29	21	58.65	13.84	51.75	6.90	—
Springfield	56,801	14	7	21.42	7.14	14.28	—	—
Holyoke	43,424	15	7	59.94	20.00	53.28	—	—
Brockton	37,278	7	2	14.28	14.28	14.28	—	—
Salem	36,883	21	11	33.33	—	28.56	—	—
Malden	34,613	17	—	47 04	5.88	41.16	5.88	—
Chelsea	33,468	19	6	5.26	5.26	—	5.26	—
Haverhill	32,622	12	6	25.00	—	25.00	—	—
Gloucester	30,589	6	—	16.66	33.33	—	—	—
Newton	29,716	15	11	33.33	6.66	26.66	6.66	—
Fitchburg	29,438	7	—	14.28	14.28	—	—	—
Taunton	28,167	20	8	25.00	15.00	25.00	—	—
Everett	25,338	3	2	33.33	33.33	33.33	—	—
Quincy	23,549	5	1	40.00	—	20.00	—	—
Pittsfield	22,643	5	4	80.00	—	80.00	—	—
Waltham	22,296	3	2	66.66	—	66.66	—	—
North Adams	20,971	12	6	50.00	—	41.66	—	—
Chicopee	17,942	9	6	33.33	—	33.33	—	—
Medford	16,511	4	1	25.00	—	25.00	—	—
Newburyport	14,915	7	4	14.28	14.28	—	—	—
Melrose	14,032	2	—	—	—	—	—	—

Deaths reported 2,918: under five years of age 1,538; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,068, consumption 261, acute lung dis-

eases 152, diarrhœal diseases 894, diphtheria and croup 60, whooping-cough 37, typhoid fever 24, cerebro-spinal meningitis 18, measles 17, scarlet fever 12.

From typhoid fever New York 8, Pittsburg 4, Boston 3 Baltimore and Washington 2 each, Providence, Springfield, Holyoke, Salem and Everett 1 each. From cerebro-spinal meningitis New York 8, Baltimore and Washington 2 each, Boston, Worcester, Gloucester, North Adams, Newburyport and Hyde Park 1 each. From measles New York 13, Pittsburg, Providence, Fall River and Somerville 1 each. From scarlet fever New York 10, Boston and Fitchburg 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,406, for the week ending July 15th, the death-rate was 16.9. Deaths reported 3,690; acute diseases of the respiratory organs (London) 177, diarrhœa 204, measles 124, diphtheria 91, whooping-cough 76, scarlet fever 32, fever 24, small-pox (London and Hull 1 each) 2.

The death-rates ranged from 11.0 in Croydon to 24.6 in Salford; Birmingham 18.6, Bradford 15.9, Cardiff 11 8, Gateshead 17.6, Hull 12.9, Leeds 17.1, Liverpool 23.3, London 15.9, Manchester 21 5, Newcastle-on-Tyne 19.2, Nottingham 19 4, Portsmouth 12.0, Sheffield 24.1, Sunderland 16.1, Swansea 20.1, West Ham 12.0.

METEOROLOGICAL RECORD

For the week ending July 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.		Relative humidity.			Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...9	29.69	73	81	65	83	65	74	S.	S.W.	10	10	O.	C.	.58
M...10	29.94	70	83	58	74	42	58	N.W.	W.	12	5	O.	C.	
T...11	30.10	76	87	65	55	65	60	W.	S.W.	6	14	C.	C.	
W..12	29.99	75	85	65	64	68	66	S.W.	S.W.	12	10	C.	O.	
T...13	29.86	72	81	63	52	40	46	W.	N.	11	3	C.	C.	
F...14	29.89	74	85	63	57	43	51	N.W.	N.W.	10	10	C.	F.	
S...15	29.94	74	82	66	53	60	56	S.	S.	10	6	C.	C.	
	29.92		83	64			73							.58

* O, cloudy; C., clear; F., fair; G., fog; H., hazy; S. smoky; R., rain; T., threatening; N., snow. † Had a trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 29, 1899.

L. W. ATLEE, surgeon, detached from the "Bennington" and ordered home via "Solace."

G. ROTHGANGER, passed assistant surgeon, detached from the "Marietta" and ordered home and to await orders.

M. K. JOHNSON, passed assistant surgeon, detached from the Naval Hospital, New York, and ordered to the "Marietta."

W. M. WHEELER, assistant surgeon, when discharged from further treatment at hospital, Yokohama, Japan, ordered home in the "United States" and to await orders.

T. M. LIPPITT, assistant surgeon, detached from the "Solace" and ordered to the "Baltimore."

L. W. PLUMMER, assistant surgeon, ordered to the Naval Hospital, New York.

J. W. ROSS, surgeon, retired, granted leave for one year abroad.

H. A. DUNN, assistant surgeon, detached from the "Panther" and ordered to the Washington Navy Yard.

L. L. VON WEDEKIND, passed assistant surgeon, detached from the hospital, Cavite, P. I., and ordered to Mare Island, Cal.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 27, 1899.

MEAD, F. W., surgeon. To proceed to New York, N. Y., and assume temporary charge of the Purveying Depot. July 21, 1899.

GEDDINGS, H. D., passed assistant surgeon. Relieved temporarily from duty on the commission for the scientific investigation of yellow fever, and assigned to temporary duty in the Hygienic Laboratory. July 22, 1899. To proceed to Boston, Mass., for special temporary duty. July 25, 1899.

PERRY, J. C., passed assistant surgeon. Detailed for duty in the office of the U. S. Consul at Hong Kong, China. July 22, 1899.

GARDNER, C. H., passed assistant surgeon. To assume temporary charge of the Port Townsend Quarantine. July 24, 1899.

SPRAGUE, E. K., passed assistant surgeon. Granted leave of absence for twenty-seven days from August 7, 1899. July 27, 1899.

WICKES, H. W., passed assistant surgeon. Granted leave of absence for thirty days from August 6, 1899. July 27, 1899.

TABB, S. R., assistant surgeon. Upon being relieved from duty at Baltimore, Md., to proceed to Savannah, Ga., and assume command of the service. July 22, 1899.

FOSTER, M. H., assistant surgeon. Upon being relieved from duty at Savannah, Ga., to proceed to the Port Townsend Quarantine Station, and report to the commanding officer for duty. July 22, 1899.

LUMSDEN, L. L., assistant surgeon. To proceed to Port Townsend, Wash., and assume temporary charge of the service. July 24, 1899.

BILLINGS, W. C., assistant surgeon. Relieved from duty at the Immigration Depot and directed to report to the commanding officer at New York, N. Y., for duty and assignment to quarters. July 26, 1899.

FOX, CARROLL, assistant surgeon. To report to commanding officer, Baltimore, Md., for duty and assignment to quarters. July 26, 1899.

MCCLINTIC, T. B., assistant surgeon. To report to commanding officer Cape Charles Quarantine, for duty and assignment to quarters. July 26, 1899.

CURRIE, D. H., assistant surgeon. To report to commanding officer at Louisville, Ky., for duty and assignment to quarters. July 26, 1899.

GOLDBERGER, JOSEPH, assistant surgeon. To report to Surgeon L. L. Williams, Immigration Depot, New York, N. Y., for duty. July 26, 1899.

KORN, WM. A., assistant surgeon. To report to commanding officer, Chicago, Ill., for duty and assignment to quarters. July 26, 1899.

HOLT, J. M., assistant surgeon. To report to commanding officer, St. Louis, Mo., for duty and assignment to quarters. July 26, 1899.

TROTTER, F. E., assistant surgeon. To report to Surgeon L. L. Williams, Immigration Depot, New York, N. Y., for duty. July 26, 1899.

VOGEL, C. W., assistant surgeon. To report to commanding officer, Boston, Mass., for temporary duty and assignment to quarters. July 26, 1899.

TUTTLE, JAY, acting assistant surgeon. Granted leave of absence for seven days. July 22, 1899.

PROMOTIONS.

HENRY GAHN, hospital steward. To be hospital steward and chemist. July 17, 1899.

W. L. STEARNS, hospital steward. To be hospital steward and assistant chemist. July 17, 1899.

APPOINTMENTS.

CARROLL FOX, of Pennsylvania, commissioned as assistant surgeon. July 25, 1899.

THOMAS B. MCCLINTIC, of New York, commissioned as assistant surgeon. July 25, 1899.

DONALD H. CURRIE, of Missouri, commissioned as assistant surgeon. July 25, 1899.

JOSEPH GOLDBERGER, of Pennsylvania, commissioned as assistant surgeon. July 25, 1899.

WILLIAM A. KORN, of New Jersey, commissioned as assistant surgeon. July 25, 1899.

JOHN M. HOLT, of New York, commissioned as assistant surgeon. July 25, 1899.

FREDERICK E. TROTTER, of New York, commissioned as assistant surgeon. July 25, 1899.

CHARLES W. VOGEL, of Maryland, commissioned as assistant surgeon. July 25, 1899.

APPOINTMENT.

DR. HENRY F. HEWES has been appointed physician to outpatients at the Massachusetts General Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Empyema of Antrum. By Henry G. Ohls, M.D., Chicago. Reprint. 1899.

A Simple Gauze-packer. By Wm. C. Bane, M.D., Denver, Col. Reprint. 1899.

Yesterday and To-day. By Francis J. Shepherd, M.D., Montreal. Reprint. 1899.

Massage and the Original Swedish Movements: Their Application to Various Diseases of the Body. By Kuno W. Ostrom, from the Royal University of Upsala, Sweden. Fourth edition, revised and enlarged, with 105 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

THE PROTEIDS OF THE URINE.[1]

BY WILLIAM B. HILLS, M.D., CAMBRIDGE, MASS.,
Associate Professor of Chemistry, Harvard Medical School.

The following cases are reported particularly for the purpose of calling attention to the form of proteid contained in the urine:

Case I. Clinical history unknown. The urine was first submitted to me February 13, 1897, to be analyzed for arsenic. I have since made eight examinations of the urine. The daily quantity, so far as I have had the opportunity of observing it, has been 1,750–2,300 cubic centimetres. Urea, 22.5–26.9 grammes. Both the heat and nitric-acid tests have showed the constant presence of a coagulable proteid. The quantity of proteid has not varied appreciably; by estimate usually about one-eighth per cent. On one occasion a quantitative determination showed 1.4 grammes per litre.

When the urine, faintly alkaline with ammonium hydroxide, was saturated with magnesium sulphate, or half-saturated with ammonium sulphate, a precipitate was obtained. These precipitates were thrown upon a filter paper, washed with a saturated solution of magnesium sulphate, and a half-saturated solution of ammonium sulphate respectively, and dissolved in distilled water (the adherent salt rendering the precipitate soluble). The solutions thus obtained contained a proteid coagulable by both heat and nitric acid, that is, globulin. The filtrates from the precipitates produced by magnesium and ammonium sulphates contained no detectable trace of albumin.

These results have been constantly obtained in the examination of the urine in this case, which is apparently a chronic nephritis, either the interstitial type or amyloid infiltration, and of special interest as being a case of pure globulinuria. Such cases have seldom been reported.

Case II. Scarlet fever in a boy of eighteen years. The urine examined on the tenth day was normal as to specific gravity and normal solids, contained a minute trace of albumin and, in the sediment, a few red blood corpuscles, leucocytes, and epithelial cells, apparently from the neck of the bladder, or the prostatic region. Two weeks later the urine was high as to color, specific gravity 1.026, free from albumin. The urine remained free from albumin four weeks later. Specific gravity 1.025. In testing for sugar at this time, using Fehling's solution, an intense rose-red color, resembling that characteristic of Piotrowski's (biuret) reaction for proteoses and peptones, was observed. The small remaining portion of the urine was saturated with ammonium sulphate and filtered, and the filtrate tested by the biuret test with a positive result. I therefore concluded that it was a case of peptonuria, but as the patient was perfectly well, no opportunity for further investigation was afforded me.

This case came under my observation many years ago, and the treatment with ammonium sulphate was not as rigid as we now know it should be for the thorough separation of albumoses. I do not, therefore, feel certain at the present time, that it was not a case of albumosuria (deutero-albumose). I report the case as the only one in my experience in which I have had any reason for suspecting the presence of true peptone, and also as an introduction to some remarks upon the subject of true peptonuria.

It is the prevailing belief that albumin is the chief simple proteid occurring in the urine, and the one which possesses the greatest importance, clinically. It is, however, a well-recognized fact that the urine may at times contain other simple proteids in solution, namely, globulins, particularly serum-globulin, proteoses, and possibly peptones. There is, at the same time, a noticeable lack of exact information relative to the frequency of the occurrence of these proteids. I have accordingly undertaken to utilize the large number of specimens to which I have access, for the purpose of obtaining, if possible, more exact information upon this point. The progress of an investigation of this nature is necessarily slow, owing to the difficulty in obtaining a sufficient number of suitable cases, as well as to the care and time required in testing for this class of bodies. This paper is presented as a preliminary communication and is confined to the consideration of globulinuria and peptonuria.

GLOBULINURIA.

Paraglobulin or serum-globulin is a representative of a class of proteids which resemble the albumins in undergoing conversion to coagulated proteid under the influence of heat or concentrated nitric acid. Accordingly in the examination of the urine for proteid by either the heat or nitric-acid test, no distinction is made between the two. Either or both, if present, are reported as albumin; a procedure which has found its justification hitherto in the assumption that both possess the same clinical significance. The globulins resemble the albumins in responding to the general color reactions of the proteids, and their solutions behave towards the general precipitants of the proteids, for the most part, as solutions of the albumins do.

The following are the important differences:

(1) Globulin is partially precipitated when a stream of carbon dioxide is passed through its solutions, which must be diluted more or less if the quantity of globulin is large.

(2) Globulin is insoluble in water, but soluble in dilute salt solutions. Consequently when solutions rich in globulin are poured drop by drop into a large volume of distilled water, the globulin is precipitated, because the percentage of salt is so far reduced by dilution, that it no longer suffices to hold the globulin in solution. The presence of globulin in the urine may frequently be detected in this manner. For the same reason, globulin is gradually precipitated from its solutions when the latter are submitted to dialysis.

(3) Globulin is completely precipitated when its solutions are saturated with magnesium sulphate or half saturated with ammonium sulphate. This property forms the basis of the only satisfactory method for the complete separation of globulin from its solutions. Half-saturation with ammonium sulphate is the more satisfactory method, since the precipitate thus obtained can be filtered and washed much more rapidly than is the case when magnesium sulphate is employed as the precipitant.

The process is carried out as follows: 25–50 cubic centimetres of the urine are made neutral or slightly alkaline with ammonium hydroxide, and the precipitated phosphates removed by filtration. An equal

[1] Read before the Boston Society for Medical Improvement, January 16, 1899.

volume of a saturated solution of ammonium sulphate is then added, the mixture shaken, and allowed to stand for some time, and finally filtered. The precipitate is washed with a half-saturated solution of ammonium sulphate for the removal of the last traces of albumin, and the filtrate and precipitate tested for albumin and globulin respectively, as previously described. The formation of a precipitate upon the addition of either magnesium or ammonium sulphate is not in itself evidence of the presence of globulin.

In testing the urine for globulin, the necessity of the preliminary neutralization with an alkaline hydroxide should never be lost sight of. Ott[2] has shown that in strongly acid albuminous urines saturation with magnesium sulphate effects the precipitation of a portion, and in some cases the whole of the albumin together with the globulin; and that the albumin remains wholly unprecipitated only when at least half the total phosphoric acid of the urine exists as a neutral phosphate. Pohl[3] also finds that the same holds true when ammonium sulphate is used as the precipitant.

Using the process above described, I have, thus far, analyzed the urine in 73 cases of acute and chronic Bright's disease, secondary renal hyperemia and local inflammatory affections of the urinary membranes; all cases in which the urine contained one-eighth per cent., or more, by weight of coagulable proteid. Globulin was found present in every case.

The case which introduces this paper was the only one in which globulin was the sole proteid. The quantity of globulin found has been very variable, usually ranging between 2 and 40 per cent. of the total proteid present. In 11 cases a trace only is noted. The largest quantity, 50–55 per cent. of the total proteid, was found in three cases of acute nephritis, in which the urine contained considerable blood, the result of an acute exacerbation. In an advanced case of chronic diffuse nephritis the globulin formed 46.5 per cent. of the total proteid present.

I have not observed any uniformity in the absolute or relative quantity of globulin in the urine of the same pathological condition. For example, in the three cases of acute nephritis just referred to, the globulin fell to a trace, 8.5 per cent. and 22 per cent. respectively, upon the disappearance of the blood. These results, so far as they relate to the frequency of the occurrence of globulin, agree with those previously obtained by Senator and by Paton.

Senator,[4] although using a process which is lacking in delicacy (precipitation by carbon dioxide), detected globulin in all the albuminous urines examined by him, and concluded that globulin invariably accompanies albumin. He found the largest quantity of globulin in the urine in six cases of amyloid disease. Globulin was abundant in the urine of acute nephritis, while the quantity was slight in cases of chronic diffuse nephritis.

Paton[5] also examined the urine in cases of acute and chronic Bright's disease, amyloid disease and functional albuminuria, and concluded that globulin always accompanies albumin. He found that the globulin varied greatly in quantity: between 2 and 60 per cent. of the total proteid. In one case of heart disease the urine contained albumin alone. He further found that the ratio of the globulin to the albumin varies so much through the day that no conclusions can be drawn unless the total urine for the twenty-four hours is examined. He ob erved that food has a great influence on the relative pr portion of the two proteids, a rich proteid diet appearing to cause an increase in the quantity of albumin excreted, especially noticeable on a milk diet.

Petri,[6] on the other hand, examined the urine in 41 cases of albuminuria, and found globulin in 13 only.

Estelle's[7] results are unique. He frequently met with cases in which globulin was the sole proteid present in the urine; and he further found that globulin invariably exceeded albumin in quantity in urines which contained both proteids. In two cases of chronic Bright's disease globulin amounted to 61 and 68 per cent., respectively, of the total proteids of the urine. His results were published before the importance of the neutralization of the acidity of the urine as a preliminary to the precipitation of the globulin was known, and are, for this reason, probably untrustworthy.

Führy-Snethlage[8] found the largest quantity of globulin in the urine, namely, 45 per cent. of the total proteid, in a case of interstitial nephritis with fatty degeneration. In two cases of amyloid disease the globulin amounted to 37 and 25 per cent., respectively, of the total proteid. He observed no uniformity in the quantity of globulin present in the urine of the same pathological condition.

Patella[9] also failed to observe any constant ratio between albumin and globulin in the urine in the different forms of albuminuria.

The statement is made in a text-book recently published (1896), that "so far not one case of pure globulinuria has been reported." Such cases have, however, been observed and reported, but the number is small. Maguire[10] has reported three cases of functional or physiological albuminuria, and one case of puerperal albuminuria in which globulin was the sole proteid present in the urine. Werner[11] also has reported a case of acute nephritis in which globulin was the only proteid present in the urine. Boyd observed a case of Bright's disease in which the urine contained globulin and albumose, but no albumin.

The following conclusions appear to be well founded:

(1) Albuminous urines contain also globulin in the great majority of cases.

(2) Globulin occurs in a small proportion of cases as the sole coagulable proteid of the urine.

(3) The same statement is probably true of albumin.

The significance of globulin as a constituent of the urine, and its value, if any, in diagnosis or prognosis, are unknown. There is, however, some basis for the belief that an increase of the proteid quotient (that is, the number obtained by dividing the quantity of albumin excreted in the twenty-four hours' urine by the quantity of globulin) is a favorable indication, a decrease, an unfavorable one. Hoffman[12] found that the proteid quotient is a fairly constant number, provided no marked change takes place in the condition of the patient; but that it always increases as the condition of the patient improves. In five cases reported by him there was a rise from 2.78 to 6.51, from 5.98 to 10.31,

[2] Prager med. Wochenschr., 1884, No. 16, p. 6.
[3] Archiv f. Experim. Pathol. u. Pharmak., xx, p. 426.
[4] Virchow's Archiv, 1874, p. 476.
[5] British Medical Journal, ii, 1890, p. 196
[6] Jahresbericht über die Fortschritte der Thier-Chemie, vi, p. 148.
[7] Ibid., x, p. 268.
[8] Deutsch. Arch. klin. Med., xvii, p. 418.
[9] Jahresbericht über die Fortschritte der Thier-Chemie, xviii, p. 301.
[10] Lancet, 1886, p. 1,082.
[11] Deutsch. med. Wochenschr., xlvi, p. 666.
[12] Virchow's Archiv, lxxxix, p. 271.

from 7.13 to 13, from 3.7 to 6, and from 1.11 to 4.47. He maintains that the proteid quotient is not dependent upon the histological change in the kidneys, but that it is influenced particularly by the intensity of the pathological process.

Csatáry [13] also finds that an increase in the proteid quotient continuing over some days is a favorable symptom, while a diminution is unfavorable. He maintains, however, that the quotient is dependent particularly upon the rapidity of the circulation in the glomeruli, and not upon the form or intensity of the pathological process, or upon the state of nutrition of the patient.

Both albumin and globulin are constituents of the blood, and there is nothing surprising in the fact that both find their way into the urine. At the same time, their occurrence in such variable proportions, and especially the occasional occurrence of one alone, suggests the existence of some condition or conditions which influence the relative amounts of the two proteids excreted. The subject seems to me to be one worthy of further investigation.

PEPTONURIA.

True peptones, in the sense in which the term is used by Kühne, are the final proteid products of the hydrolysis of proteids. Proteids undergo this conversion physiologically, in the process of digestion. The same change is also effected through the agency of dilute acids at a suitable temperature, superheated steam and putrefactive bacteria.

Peptones are very soluble in water, and non-coagulable by heat or nitric acid. They are characterized by their diffusibility, a property which is also shared to some extent by the proteoses. In common with the proteoses, they give the rose-red biuret reaction with an alkaline hydroxide and solution of sulphate of copper. They differ from all other simple proteids in their non-precipitation by acetic acid and potassic ferrocyanide, and are especially characterized by the fact that they are not precipitated from their solutions, whether neutral, acid or alkaline, by saturation with ammonium sulphate. According to Chittenden, the latter reaction constitutes the main, and perhaps the only absolute, method of separating peptones from proteoses.[14] The literature of so-called peptonuria is very extensive, but it may, for the most part, be dismissed from consideration in this connection. A study of the numerous cases which have been reported in the journals shows conclusively that in many of these the characteristic proteid constituent of the urine has not been true peptone, but some form of proteose. In many cases faulty methods of analysis have been employed, and one is therefore left in doubt as to the true nature of the proteid, whether proteose or peptone.

This condition appears to find its explanation in a disposition to adhere to the old nomenclature, and to employ the term peptone either as synonymous with the so-called propeptone of earlier years, which is simply a mixture of proteoses of variable composition, or even to employ it in a more general sense, as it was formerly employed, to include all the products of digestion after the stage of acid proteid; in other words, to include both proteoses and peptones.

It is, I believe, a fact that there is at the present time no record of an authentic case of true peptonuria.

[13] Jahresbericht über die Fortschritte der Thier-Chemie, xix, p. 444.

[14] On Digestive Proteolysis, Cartwright Lectures for 1894, p. 63.

Senator [15] many years ago, before the distinction between proteoses and peptones was known, concluded that peptone exists in small quantity in every albuminous urine. More recently, however, he states that the proteids hitherto detected in the urine and reported as peptones are not true peptones, but albumoses.[16] According to Robitschek,[17] Kühne's peptone has never yet been detected with certainty in any animal organ or secretion. And Novy [18] states that there is probably no positive evidence that true peptone has been met with in fresh urine.

The occurrence and significance of peptonuria are, in fact, matters for future investigation. Moreover, the subject of albumosuria requires revision, for many cases have been reported upon the basis of very faulty methods of analysis. It is very important that, in future investigations of both albumosuria and peptonuria, the method of analysis employed shall be one which shall distinguish absolutely between these two proteids. The following method meets this requirement: The urine, freed from albumin and globulin, if present, by slightly acidifying with acetic acid, boiling and filtering while hot, is saturated with ammonium sulphate for the precipitation of the proteoses. This part of the process must be carried out with great thoroughness in order to effect the separation of the last traces of deutero proteose, if any is present. This is a form of proteose which stands near the peptones in its properties. According to Kühne,[19] it is not completely precipitated by saturation with ammonium sulphate unless the solution is boiled for a long time, and even then it may be necessary for complete precipitation to make the reaction of the liquid alternately neutral, acid and alkaline, and heat for some time after each change in the reaction. The precipitate, which may contain proteoses, urobilin and urates, is reserved for examination for proteoses. In the filtrate peptone may be detected by the biuret test, provided the urine is a practically colorless one. Otherwise the test cannot be applied directly, with reliable results, owing to the disturbing influence of the urinary coloring matters. In some recent experiments, using a specimen of Witte's peptone which was composed almost entirely of albumoses, I found that the biuret test, applied directly to urines of average color, did not respond with less than two to two and a half grammes of the peptone to the litre.

Chittenden [20] recommends the following process as perhaps the most satisfactory for the separation of the peptone from the ammonium-sulphate-saturated solution. The fluid is concentrated somewhat and set aside in a cool place for crystallization of a portion of the ammonium salt. The fluid is then mixed with about one-fifth its volume of alcohol, and allowed to stand for some time, when it separates into two layers, an upper one rich in alcohol, and a lower one rich in salts. The latter is again treated with alcohol, by which another separation of the same order is accomplished. The lighter alcoholic layers containing the peptone are united and exposed to a low temperature until considerable of the contained salt crystallizes out. The fluid is then concentrated, and after addition of a little water is boiled with barium carbonate until the fluid is en-

[15] Archiv f. path. Anat. u. Physiol., lx, p. 476.

[16] Centralblatt f. d. med. Wissensch., 1886, p. 467.

[17] Zeitschr f. klin. Med., xxiv, p. 558.

[18] Laboratory Work in Physiological Chemistry, p. 186.

[19] Chittenden's Digestive Proteolysis, p. 63, from Zeitschr. f. Biol., xxix, p. 2.

[20] On Digestive Proteolysis, p. 64.

tirely free from ammonium sulphate. Any excess of baryta in the filtrate is removed by cautious addition of sulphuric acid, after which the concentrated fluid, reduced almost to a syrupy mass, is poured into absolute alcohol for the precipitation of the peptone.

The precipitate obtained with ammonium sulphate, and which may contain proteoses, urobilin and urates, is washed first with a saturated solution of ammonium sulphate, then with alcohol containing a little chloroform for the removal of urobilin, and finally dissolved in water and the solution thus obtained tested by the biuret test.

Halliburton and Colls [21] have suggested the possibility of the formation of proteoses and peptones from the albumins and globulins in the process of separating the latter by heat after acidification with acetic acid. This has never occurred in my work, and I do not believe that any appreciable quantity of proteose or peptone is likely to be formed in this process. By means of the method just described I have thus far examined the urine in 23 cases. In no case was true peptone found. Albumose was detected in two cases. One was a case of pneumonia, in which the urine was analyzed two or three days before the death of the patient, and found to contain much albumose, with a trace of albumin. The other was an advanced case of diffuse nephritis. The urine contained albumin and globulin, with a trace of albumose.

So far as I can learn, true peptonuria has not yet received much attention at the hands of investigators. Schulter [22] examined the urine in eight cases of pregnancy, and in eight other cases (nephritis, pulmonary tuberculosis, scarlet fever, intermittent fever, pneumonia, carcinoma), and failed to detect true peptone. Senns [23] examined the urine in a variety of affections, in which there was suppuration, or destruction of tissues, and found at times albumose, but never true peptone.

Sior [24] could never detect true peptone in the urine of children, and also maintains that fresh pus never contains true peptone. If, however, pus is exposed to the air for some days true peptone is formed from the other proteids present.

On the basis of these few researches, we are unable to form any opinion as to the frequency of peptonuria as a symptom. I have presented these brief remarks for the purpose of calling attention to the present state of our knowledge of this subject, and I desire particularly to emphasize the importance of observing greater exactness in nomenclature in the future. Cases of albumosuria should be reported as such, and not as cases of peptonuria or propeptonuria, as has been the case in the past. The term peptone should be used to include those proteid products of proteolysis only which are not precipitated by saturation of the liquid containing them with ammonium sulphate.

[21] Journal of Pathology and Bacteriology, 1895, iii, p. 295.
[22] Jahresbericht über die Fortschritte der Thier-Chemie, xvi, p. 228.
[23] Centralblatt f. d. med. Wissensch., 1892, p. 825.
[24] Jahr. f. Kinderheilk., xxxvii, p. 352.

LEPROSY IN CUBA. — According to the *Journal of the American Medical Association*, in several of the principal cities of Cuba there have been asylums for lepers who resorted to them voluntarily, but without strict isolation; during certain hours of the day the inmates were free to go in and out as they pleased. The sanitary authorities of Havana have now forbidden the lepers to leave the asylum.

OSTEO-ARTHRITIS OF THE SPINE: SPONDYLITIS DEFORMANS.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

THE term osteo-arthritis is used to designate the disease of the articulations which is characterized pathologically by a marked proliferation of the edges of the articular cartilage, associated with an atrophy or degeneration of the cartilage at the points of pressure, the two conditions producing an amount of impairment of function of the joint varying from the slightest inconvenience to complete anchylosis.

Various terms have been used to designate this condition, some of them suggestive of the general process, while others refer only to the local manifestation. Of the former, chronic rheumatism, arthritis deformans, rheumatoid arthritis, rheumatic gout, dry or proliferating arthritis, malum senile, arthrite sèche are the most commonly met with. Of the latter, the most common are malum coxæ senilis, referring to the disease as seen in the hip and spondylitis deformans, or spondylose rhizomelique, representing the same process involving the spine.

It is with reference to this latter manifestation of the disease that this paper is concerned, and while some mention of the general process is necessary, it will be only such as would be of value in considering the local disease.

The disease has been described by various writers in journal articles, but as yet there has been but slight mention of the subject in the works on orthopedic surgery, and most of the literature is devoted to the report of individual cases, with but little consideration of the disease itself. It is for this reason, and also because it seems to me from my observation that the disease is more common than has been supposed, that the subject is offered for discussion here.

Bradford in 1883 [2] reported three cases of "rheumatism of the spine," all in men between thirty and thirty-six years of age. In two practically the whole spine was stiff, with anchylosis of the ribs. In the other the rigidity of the spine was confined to the dorsal region. In the first two cases there was a gonorrheal history. In all of these cases the spine alone was affected.

Marie,[3] under the term spondylose rhizomelique, reports five cases of his own, in one of which there was a distinct gonorrheal history. One patient was sixty years of age, the others from thirty to forty, and in all some of the other joints, usually the hips or shoulders, were affected.

Strümpell [4] reports three cases, and in his book describes the type of painless progressive ossification of the spine and hips.

Mutterer [5] reports a case of a man fifty-eight years of age, with complete anchylosis of the spine, together with anchylosis of both hips and some slight trouble with the knees.

S. Popoff [6] reports a case of a man twenty-eight years of age in which the process developed very rapidly and was associated temporarily with weakness of the legs. This weakness disappeared as the disease became less active.

[1] Read before the American Orthopedic Association, May 31, 1899.
[2] Annals of Anatomy and Surgery, Brooklyn, 1883, vol. vii, p. 6.
[3] Rev. de Méd., 1898, xviii, 285.
[4] Deutsche Ztschr. f. Nervenhk., 1897, p. 338.
[5] Loc. cit., 1895, Bd. xiv, 1 and 2 Heft.
[6] Neurologisches Centralblatt, Jahrg., No. 7.

Beer[7] reports three cases, thirty-nine, forty-seven and forty years of age. In one a history of gonorrhea is given; in one the hips and shoulder-joints were affected; in another the shoulder and hand, and in one there is no mention of the other joints.

Marie and Astic[8] report a case of a man sixty years of age with trouble with the back of ten years' duration. The spine is completely anchylosed.

Bechterew[9] reports five cases: two women about fifty years of age, in both of which about half the spine was rigid, with no other joints affected. Of the three men, one, a patient thirty-nine years of age, had the spine completely anchylosed, with the symptoms of nerve pressure, such as areas of anesthesia and others of hyperesthesia. Other joints were not affected. Of the other two, one had paralysis agitans and the other was insane. In both cases the spine was rigid and there were symptoms suggestive of pressure upon the nerve roots. The other joints were apparently not affected.

Individual cases are also reported by Fagge,[10] Spillman and Etienne,[11] Gasne,[12] Raymond,[13] Sänger,[14] Stocker,[15] Henle,[16] Baumler,[17] Davies Colley,[18] Sturge,[19] and Pasteur.[20]

Of my own cases, ten in all, most of them have been seen in the Orthopedic Clinic (for adults) at the Carney Hospital, and the cases which have been selected are those which are particularly characteristic and in which the other joints have been but little if any involved.[21]

The first case was previously reported by me in the *Boston Medical and Surgical Journal* of December 26, 1895, and is here reported because of its relation to the other cases.

Case I. Mrs. McC., fifty-eight years of age, by occupation a nurse, had always been well and actively engaged in her work until the present sickness. Her family history is good, and she never had the least trouble from rheumatism. In July, 1893, she was caught in a thunder shower, and her clothing wet through. The next morning she complained of pain in the neck, with some tenderness in the upper part of the chest. There was no cough or expectoration. The pain in the neck increased in severity very rapidly, until the slightest motion caused the most intense suffering, and because of this she was admitted to the Good Samaritan Hospital. The patient entered the hospital in the service of Dr. Coolidge, and it was through his kindness that I was enabled to see her.

At the time of the first examination she was evidently suffering a good deal. The head was held a little to one side, the chin to the left, the shoulders drawn up, and all motions were most carefully guarded by muscular contraction. Any attempt at motion caused great pain. None of the other joints were in the least involved, and aside from this local condition the patient seemed well.

For the first week or two the patient was kept quiet in bed, and the various rheumatic remedies freely given with very little if any effect. After this a Thomas collar was applied for more complete fixation, and following this light-weight extension was used. These gave some relief, but neither could be used continuously because of the nervousness of the patient; so that the two appliances were used alternately, each being worn for a few hours. In three or four weeks after the beginning of the attack a swelling appeared in the right side of the neck. This was about the size of a small lemon, and was apparently connected with the spine. At the same time the numbness of the left arm was noticed, with some impairment of motion, and this condition continued and increased until the arm was almost entirely helpless. The right arm and both legs also became involved, never in as marked a degree as the left arm, but enough to make motion in bed, unassisted, impossible. At one time there was difficulty in swallowing, and for a short period breathing was almost entirely diaphragmatic.

The patient's condition remained about the same for two months, after which there was a slow but steady improvement, so that at the end of the third month she was able to sit up for a short time each day, and in December, five months from the onset of the trouble, she was able to move about with but little assistance, and was taken home. The paralytic symptoms referred to in the right arm and legs had by this time practically disappeared, but the left arm was still very helpless. The swelling in the neck was practically the same as when first noticed.

The patient was not again seen until thirteen months later, during which time, aside from the Thomas collar, no special treatment had been carried out. At the time of this examination the improvement in the patient's general condition was most marked. She moved about with perfect ease, and, aside from the stiffness of the neck and some impairment in the use of the left arm, she seemed well. Extension of the neck was entirely restricted, so that in order to raise the chin the whole body was bent backward. Rotation was also entirely restricted, while flexion was more free, it being possible to lower the chin to the chest. On each side of the neck, over the transverse processes, was very distinct thickening, apparently bony in character. In the left arm all motions were limited, especially those in which the shoulder muscles were used. The fingers were flexed, apparently due to the contraction of the palmar fascia and the flexor tendons. The sensation of the hand and arm was normal.

At the present time the patient's condition is practically the same as at the time of this last note. She is able to be about at her work, but there has been no change in the condition of the neck or arm.

Case II. Mrs. M., seventy years of age, came to the Carney Hospital over two years ago. She had considered herself, and had been considered by her family, to be well, until ten years ago. At that time she fell on the floor striking the lower part of the spine. Since then she has had more or less pain in the back, and while previously she had carried herself quite erect, she gradually bent over both to the front and to the side. Except the spine, the joints were not affected. At the time of the examination there was a large rounded kyphosis involving the whole dorsal and lumbar spine, together with quite marked lateral deformity. There was but little motion in the spine, and no symptoms of paralysis. Fig. 1 represents her condition at that time.

Case III. G. K., a man twenty-one years of age, a steel polisher by occupation, came to the Carney Hospital in June of 1897. For one year he had been having trouble with the back, with a gradual loss of the use of the arms and legs. At the time of the first examination the whole spine was bent forward and was rigid. None of the other joints were involved. The left arm could not be raised to the head, and both legs were very weak. The knee reflexes were present, the left being exaggerated. There was marked muscular atrophy of both arms and legs. The patient was seen by Dr. Bullard, and the diagnosis of osteo-arthritis with pressure upon the nerve roots confirmed.

Case IV. D. F., a man twenty-nine years of age, an ordinary laborer, came to the Carney Hospital in Septem-

[7] Wein. med. Blätter, 1887, xx, 127 and 139.
[8] Presse Méd., 1897, October.
[9] Neurol. Cbl., 1893, 426; and Deutsche Ztschr. f. Unfallhk., 1897, xi, 326.
[10] Tr. Path. Soc., xxviii, 1877, p. 201.
[11] Rev. de Méd., 1890, xviii, p. 746.
[12] Sem. Méd. 1890, 75.
[13] Loc. cit., 69.
[14] Neurolog Cbl., xvii, 1898, 1,144
[15] Clinical Journal, 1894, May 9, p. 35.
[16] Vereinsbeilage S. deutschen med. Wochen., 1894, S. 20.
[17] Deutsche Ztschr. f. Nervenhk., xii, 1898.
[18] Tr. Path. Soc. 1855, 359.
[19] Tr. Clin. Soc., 1879, xii, 204.
[20] Loc. cit., 1889, xxii, 206.
[21] The pathological specimens are from the Warren Museum at the Harvard Medical School.

ber, 1897. Some years previous he had an attack of rheumatism when in Ireland which lasted for three weeks. After that he came to this country and for a time "fired" in an engine-room. He used "to sit in draughts to get cool." This brought on another attack of rheumatism and he was unable to walk for seven weeks. The patient was well after the second attack of rheumatism until a few months ago, at which time he had typhoid fever. Soon after he was able to be about he noticed pain in the back, and as this increased and prevented him from working, he came to the hospital. At that time the spine was straight except for a slight prominence of the eighth, ninth, and tenth dorsal spines. The motions of the whole spine were guarded, but those in which the low dorsal vertebræ were used were least free. A plaster-of-Paris jacket was applied to prevent an increase of the deformity, and a little later this was changed to a leather jacket, which has been worn until the present time. There has been some bending forward, as is shown in the photograph, Fig. 2, and his spine has gradually anchylosed, so that at present it moves as one piece from the pelvis to the lower part of the cervical region. The ribs have also become anchylosed, so that the respiration is entirely diaphragmatic. His general health is good and except for an occasional few days of pain in the feet the other parts of the body have not been involved.

Case V. P. B., a man twenty-four years of age, came to the Carney Hospital in the early part of this year. His previous history was good and there was no history of rheumatism in the family. His work was that of stationary engineer, having charge of a hoisting engine, and, being obliged to work in all kinds of weather, he was much exposed. Five years ago he noticed pain in the back and feet for a time, but has been regularly at work until the past year. Since then he has been so weak and tired so easily that he could not work. When seen at the hospital the whole back was arched forward as shown in Fig. 3, and there was complete anchylosis from the pelvis to the mid-cervical region. The ribs were also anchylosed so that the breathing was wholly abdominal. The other joints were not involved and there were no signs of nerve pressure. The chief complaint was pain in the small of the back, due undoubtedly in part to the active disease, and partly to the muscular fatigue resulting from the posture. For treatment, aside from general remedies, the patient has worn a light spring-steel brace with much benefit.

Case VI. J. S., a man twenty-five years of age, came to the Carney Hospital in March of this year. For occupation he had done "firing" in a gas house and has considered himself well until the past three or four months, since which time he had had pain in the feet followed by pain in the hands and spine. At the present time the whole spine from the pelvis to the mid-cervical region is rigid, and the ribs also are anchylosed, so that the breathing is wholly abdominal. A few of the small joints of the hands and feet are involved. The spine is fairly erect, there being but little of the anterior bending.

Case VII. G. H., a man thirty-two years of age, consulted me in September, 1898, at the request of Dr. H. W. Cushing, of Johns Hopkins Hospital. The patient was a professor in one of our large universities. His family history was excellent, he had been well previous to January, 1897, when he broke down nervously. He went abroad, and soon after this, stiffness of the neck and shoulders developed, not enough, however, to prevent his going about. Soon after this, numbness developed in the left arm, with marked loss of power, and later the right arm was similarly involved, only not so severely. The condition improved slightly and then remained about as it was at the time of the examination. At that time there was a moderate rounded curve involving the upper dorsal and cervical regions of the spine. This portion of the spine was rigid. The shoulders were drooped forward and there was marked atrophy of the muscles of the chest, shoulders and upper back. Both shoulder-joints were somewhat involved, so that the motions were limited, and there was some thickening about the head of the humerus. On attempted motion there was marked spasm of the muscles about the shoulders and upper spine. The legs were normal and there was no change in the reflexes. There was a distinct loss of power in the left arm, with some numbness, and there was a tendency to the same condition on the right side. The treatment, which has been almost wholly general, has been followed by improvement.

Case VIII. C. H., a man sixty-two years of age, was referred to me by Dr. Geo. Bancroft, of Natick, in April last. When in the Civil War the patient contracted "rheumatism," and the back has been stiff ever since, so that he has not been able to work regularly. The neck has not been involved until the past eight months, previous to which time he overworked and broke down. Since this time the neck has been painful and has been growing worse. When examined the whole lumbar and dorsal spine was anchylosed and free from pain. The cervical region could be moved but slightly, and this only with great pain. Even the atlas and axis were apparently involved, there being but a very few degrees of motion of the head in any direction. The ribs moved slightly on respiration. The sensation in the right arm was much impaired, but the muscular strength remained about the same as the other side. The other joints were not involved. A Thomas collar to support the head gave very marked relief in this case.

Apparently in this case there have been two separate attacks of the disease — one early in life, and the other one thirty years later.

Case IX. M. J. K., a man thirty-four years of age, by occupation a currier, was seen by me at the Massachusetts General Hospital with Dr. John Homans. The patient had been well previous to five years ago. At that time he had an attack of pain in the shoulder, the left knee, and the right foot. Soon after this he noticed that his back was somewhat stiff. Three years ago the pain became acute in the right heel and since then this has caused him the most trouble. One year ago he had another attack of the so-called rheumatism, in which the neck was affected. He was in bed at that time for six months, and since then the back has been much stiffer and it has been difficult for him to breathe freely.

When seen by me he was well-nourished and developed. The spine was straight and was anchylosed from the pelvis to the cervical region. The ribs moved but slightly with respiration, the breathing being almost entirely abdominal. The other joints were in fairly good condition except the right heel, which was painful, and the x-ray picture showed a similar osteo-arthritic process. The position of the spine is shown in Fig. 4, and is interesting as showing that the rounded back is not necessarily characteristic of the disease.

Case X. Mary S., thirty five years of age, came to the Carney Hospital about three years ago because of trouble with the back and neck. The history as given was that a few months previous she made a change in the underclothing and took cold. This was followed by a sudden pain in the neck which prevented her from being about. At that time the slightest motion of the head was extremely painful. No other joints were involved. The arms for some time could not be used freely, the left one being the worse. Under general treatment the patient gradually improved so that at the present time, except for the rigidity of the upper dorsal and the lower half of the cervical spine, she is well.

In all about 35 cases have been reported previously, or 45 cases, including the 10 of my own. Besides this there have been several reports of pathological specimens, illustrating the pathological appearance of the disease entirely apart from the clinical history.

In analyzing such a series of cases certain facts are at once suggested, but before they can be studied to much advantage they must be distinctly differentiated from the other type of rheumatoid disease, which is chronic in character and also leads to joint anchylosis,

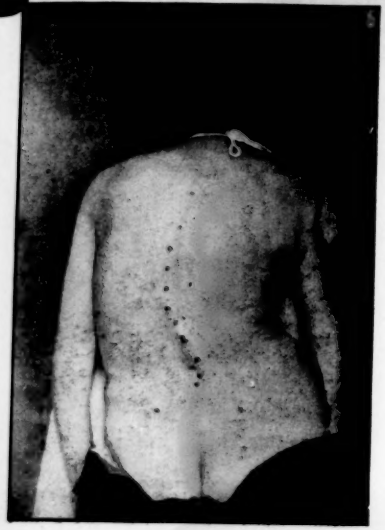


FIG. 1.

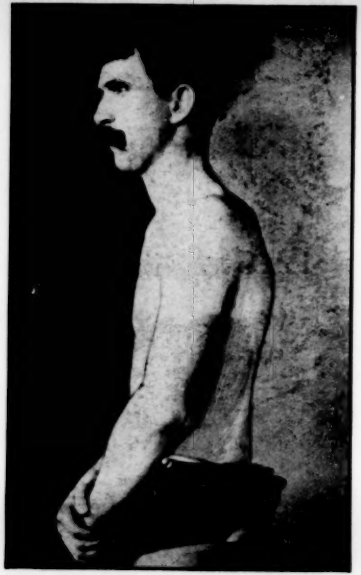


FIG. 2.

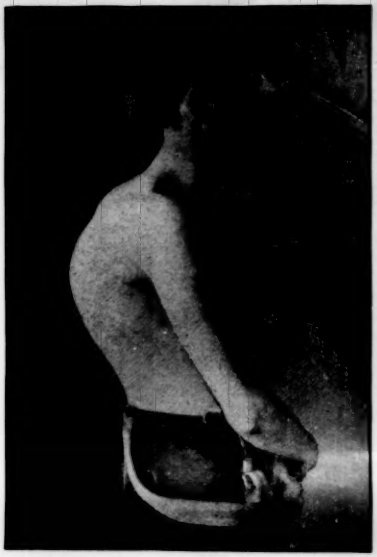


FIG. 3.



FIG. 5.

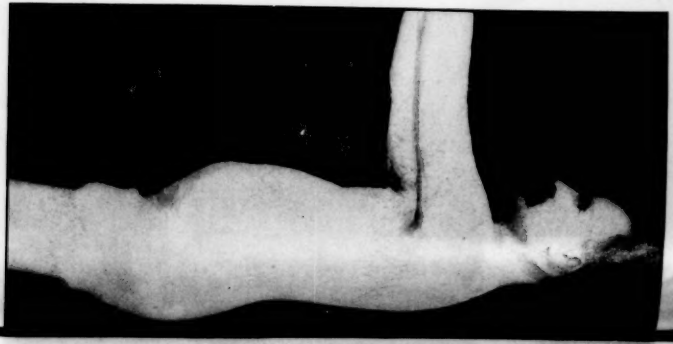


FIG. 4.



FIG. 6.



FIG. 7.



b FIG. 9. *a*

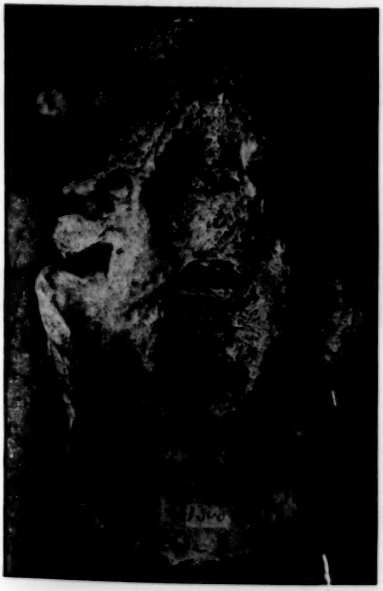


FIG. 8.

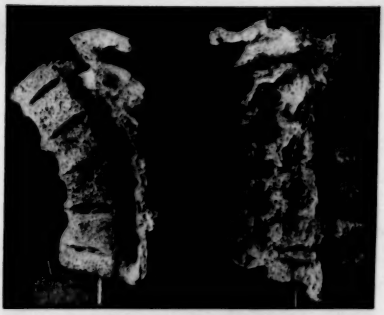


FIG. 10. FIG. 11.

but in which there is atrophy of all the joint structures with no tendency to nodular growth or osseous deposit, as is seen in the type of disease under consideration.

Both of these diseases are usually considered together in the text-books under the head of arthritis deformans, which accounts for the variation in the clinical picture as it is presented by the various writers.

As the cases are seen side by side there cannot be the slightest question but what there are two distinct diseases, or two very widely divergent types of the same disease, and it is because of this that much of the confusion has arisen.

In a paper published in the *British Medical Journal* Bannantyne and Vollman have carefully described the two types, and in a paper entitled the "Treatment of Joints disabled by the so-called Rheumatoid Diseases," published by the writer in the *Boston Medical and Surgical Journal*, January 29, 1897, the two types were described and illustrated. In that paper the descriptive term "arthritis deformans" was used to designate the whole class of these so-called rheumatoid diseases. Rheumatoid arthritis was used to designate the cases in which joint inflammation and atrophy, resulting in anchylosis and marked distortion, were the chief features, while osteo-arthritis was the term used for the cases in which the nodular deposits about the articulations were the most prominent features.

The importance of this differentiation is mentioned because several of the cases which have been published as spondylitis deformans are undoubtedly cases of rheumatoid arthritis, and are not osteo-arthritis, which explains the discrepancy in the clinical picture.

It is evident, in the first place, in the analysis of the cases that the disease is essentially a disease of adult life, but not necessarily a disease of old age, as is often stated. Some of the worst cases have developed in the period of late adolescence, while in very few has the process started in old age. The disease as it is seen in old age is not so definitely localized in the spine, but, as a rule, the other joints are also more or less involved.

Another feature which is also noticeable is that there is no one cause or definitely recognized etiology to explain the onset. Gonorrhea has been mentioned as a probable cause in a certain number of instances, but in a much larger number this is not suggested as a possibility. In the majority of cases the cause seems to be some exposure or the rapid change in temperature of the affected part. These influences are recognized and accepted as etiological factors in similar phenomena in other parts of the body, and their importance in spondylitis deformans is probably equally certain. Exposure to wet or cold, or occupations which necessitate sudden changes from heat to cold, such as "firing" or "engineering" are the causes most frequently met with. Bechterew suggests trauma and heredity as possible causes. Beucke believes the process to be due to senile and mechanical causes.

Most of the other writers, however, either do not express an opinion as to etiology, or else accept exposure and gonorrhea as most probable.

Still another thing which is evident is that the disease is not peculiar to this generation, and that it also is not peculiar to the human race. Bland Sutton reports a specimen illustrating this disease in a mummy taken from the pyramids, while Sutton reports the disease in oxen and horses, and Bricon mentions a similar condition in cats.

Pathologically the disease consists of a nodular enlargement of the edges of the articular cartilages, with the subsequent ossification of these nodes and an extension of the process into the ligaments which have their origin or insertion near by. With this hypertrophy at the edges of the cartilage the centres or areas of pressure usually undergo atrophy. In the atrophy the interstitial tissue is the last to be absorbed, which explains the granular appearance as it is seen at times, but as the process continues this interstitial substance is absorbed, and either the two surfaces of bone fuse or remain in apposition. In the other joints in which there is free motion the bare surfaces of bone frequently become polished and increase in density.

The process in the spine usually begins upon one side anteriorly and extends up or down along the anterior lateral ligament. It may remain as a comparatively local process involving only a small portion of the ligament, as is shown in Fig. 5 and Fig. 6, or it may cross over to the other side and extend up and down until the whole spine is invaded. When this occurs the chief deposit or new formation of bone is along the lateral ligament, the change in the median line consisting simply of a fusion of the vertebræ, as shown in Fig. 7 and also Fig. 8, in which the lumbar spine had become joined to the sacrum.

At times, even though the hypertrophic change is quite active, that which develops from adjoining vertebræ does not fuse and a more or less free joint remains. This is distinctly shown in Fig. 7 and also in Fig. 9, in which an intermediate joint remains mobile (*a*), even though the osseous deposit has been so extensive as to entirely overlap the articulation in front (*b*).

As the disease goes on in the ligaments and cartilages the intervertebral substances atrophy, and if the process is slow the entire intervertebral disc may be absorbed before anchylosis takes place. If this be the case naturally the back is rounded and the spine becomes very much arched, as shown in Fig. 10. If, on the other hand, the process is more active the vertebræ may become anchylosed before the disc has been absorbed, and consequently no deformity is produced. If this be the case the disc ultimately is replaced by osseous tissue and the anchylosis rendered more complete. The condition is shown in Fig. 9. If the process is more active on one side than the other it is easy to see that lateral deformities may result and naturally this is more commonly seen in the cervical region, where the spine has more flexibility. The condition is well shown in Fig. 11.

While these changes are taking place in the anterior portion of the spine, similar changes take place in the ligaments and articulations at the back, so that the transverse and rarely the spinous processes are affected. It is the disease in these regions that causes most of the symptoms of paralysis or disturbed sensation, by narrowing the foramina through which the spinal nerves pass.

Clinically, as the disease is seen, the subjective symptoms are usually slight in comparison to the actual pathological change, and frequently there has been so little trouble with the back, and the change has taken place so gradually, that the patient is not conscious of any special limitation, the condition being discovered by accident. More often, however, there is considerable pain, which is referred to the back and which is aggravated by change of position. When quiet the

pain is so much relieved that the patient frequently does not seek treatment until the disease is far advanced, or even if treatment is asked it is often excused without examination as a "touch of rheumatism" and the therapeutic suggestions made accordingly.

If the disease is seen early, before much actual change has taken place, there is usually a definite region in the spine to which the pain is referred, and in this region the motions are restricted, at first, of course, by muscular spasm, but later by osseous change. At this time, when the process is so definitely localized, the portion of the spine affected may appear more prominent than normal, suggesting the beginning deformity of Pott's disease, and at this time a positive diagnosis may not be possible. The onset is suggestive and also the reference of the pain to the back at the exact seat of the disease rather than the referred or abdominal pain of Pott's disease, but it may require some weeks before the true nature of the process can be determined. Case IV was at first thought to have Pott's disease, and it was only after seeing him several times that the correct diagnosis was made.

As the anchylosis of the spine takes place the ribs almost invariably are affected, and the process may prove so extensive that all the articulations become anchylosed, and the thorax is perfectly rigid. In this case thoracic respiration is of course entirely lost and the breathing is done wholly by the diaphragm.

Beside the pain in the back and the limitation of motion, neuralgic pains in the arms or legs, together with disturbances of sensation, numbness or hyperesthesia, are probably the most common symptoms. These are, of course, due to pressure upon the nerve roots, and consequently are not seen until the disease is well advanced, or when the onset has been unusually rapid, as in Case I. Following these neuralgic pains, when the disease is well advanced, paralysis may result, the extent of which varies from complete inability to use the part to a slight inconvenience. Rarely are the two sides affected equally, or if both sides are affected the symptoms have developed at different times. This, together with the fact that the paralysis is peripheral in type, is of importance in differentiating it from Pott's paraplegia.

Occasionally, when the disease is very active, the same osseous deposit takes place in the posterior ligament (*ligamentum longitudinale posticum*), and may result in enough narrowing of the spinal canal to produce symptoms of pressure paralysis, exactly similar to that seen in connection with Pott's disease. This is not very common, but nevertheless does occur and must be borne in mind in making the diagnosis. Case I had this type of paralysis in connection with the paralysis of the arms, due to the pressure upon the nerve roots. The presence of the two types of paralysis is of assistance in determining the diagnosis.

After the active stage of the disease has passed, with the lessened vascularity and natural shrinking of the non-osseous structures the direct pressure upon the spinal cord is usually relieved and the same may be true of the pressure upon the nerve roots. In my own experience, and so far as I can learn from the reported cases, there is no case in which the symptoms due to the direct pressure upon the cord have not been relieved. With the involvement of the nerve roots, while there has always been some improvement, in many of the cases the recovery was never complete.

The deformity, which is so striking at times, has a wide range of variation. In the most extreme form the rounded back with the protruded head and the flat chest (Fig. 3) is the type usually pictured or described. It is evident, however, that the nature or extent of the deformity must vary with the seat or extent of the disease, and also with the rapidity of its development. In Case IX, Fig. 4, the whole dorsal and lumbar spine is anchylosed, with scarcely any change in the normal curves.

The lateral deformity of such an extreme type as is shown in Fig. 1 is rarely seen, and probably could only occur late in life. The deformity is probably due to osseous deposit and thickening on one side of the spine, with atrophy and softening on the other side. A moderate amount of lateral deformity is not uncommon, and is almost always present when the disease is in the cervical region.

The treatment of this disease is of more importance than is commonly supposed, and is partly medicinal and partly mechanical. As an early diagnosis is, of course, of the first importance, it is at this time, before the deformity has taken place, that the most can be accomplished. The disease is probably a trophic process and consequently all medicines or methods of treatment which debilitate should be most carefully avoided. This naturally includes the various so-called rheumatic remedies, all of which are depressants, and also the various baths or courses of treatment which tend to lower the vitality. The general treatment should be wholly nourishing and stimulating. Extra diet, stimulating bathing, massage of the unaffected parts, electricity in a mild current, all are of value, and also the dry heat, provided it is not used so frequently as to be debilitating, relieves the pain and does much good. For medicines, iron, arsenic and strychnia are the drugs which are of the greatest value. Cod-liver oil and alcohol in medicinal doses are also useful. For mechanical treatment some form of spinal support should be used at once, partly to relieve the pain by restricting the motion, and partly to prevent the marked deformity from developing. Case IV was under treatment quite early in the disease and even with the imperfect general care which it was possible for him to have he has been kept from becoming more deformed than is shown in his picture (Fig. 2). A plaster-of-Paris jacket was used at first, and this was followed by a leather jacket, which is still worn. The whole spine has been involved and also the articulations with the ribs, and I am sure that without treatment the deformity would have been as great as that shown in Fig. 3. The position of the chest, with the greater room for respiration, has had a very definite beneficial effect upon his general health.

Manipulation of the spine is naturally of little value, and probably would result in more harm than good. Attempts have been made to forcibly break up the anchylosis,[22] but they have been followed, as would be expected, by results which were not satisfactory.

The Plague in India. — At Poonah, a city on the railroad from Bombay, where the plague is raging with unusual fury, there were, according to the *Medical Record*, 210 new cases and 177 deaths during the last week of July. In all there have been 301 cases and 261 deaths. Several Europeans have died.

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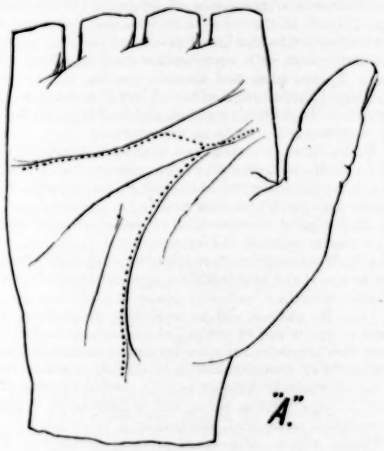
[22] Strümpell: Deutsche Ztsch. f. Nervenhk., xi, 1897, p. 338.

OPERATIONS IN THE TREATMENT OF PALMAR ABSCESS.[1]

BY W. A. BROOKS, JR., A.M., M.D., BOSTON.

As a rule, the operation upon a palmar abscess consists in making numerous short incisions through the skin over the metacarpal bones. The operation is simple of execution, and by allowing the greater part of the pus to escape greatly diminishes the danger of further extension of the suppurative process. It does not, however, give the surgeon a chance to see and examine the true condition of the structures in the palm. Even with the free use of the curette, it is lacking in thoroughness, owing to the fact that in the greater number of cases many pockets of pus remain undiscovered and unopened.

The post-operative treatment of cases operated upon by this method is unsatisfactory, for the reasons that the openings are so small that gauze drainage is likely to prevent free drainage rather than favor it, and the



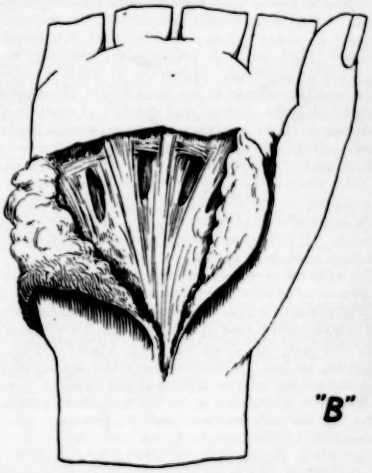
removal and replacing the wicks during the daily dressing cause the patient considerable suffering.

The incisions themselves, owing to their number, location and direction in which they are made, are the cause of a great deal of the stiffness which is so commonly seen in the palms of patients who have had palmar abscesses operated upon by this method, as they leave scars which run at right angles to the natural folds and are generally firmly adherent to the deep structures. Such being the case it is next to impossible for the palm to fully regain its natural flexibility.

In view of these facts, any operation which would seem to offer the advantage of being more thorough, which makes the daily dressing less painful and tends to lessen the amount of subsequent stiffness, is worthy of consideration and trial.

For the past year I have used the following method of operating upon these cases, and the results have proved most satisfactory as compared with the results obtained by the old method. The operation consists in making a long incision following the natural furrows of the palm and in dissecting back the skin, thus converting the palmar bursa into an open pouch. The incision is commenced at the end of the transverse furrow, on the ulnar side, carried almost the entire length of the furrow, then carried across to the furrow which winds around the base of the thumb, and along this to the wrist. If necessary the incision can then be carried up the middle of the forearm. After the incision has been completed the skin is carefully dissected up from the palmar fascia and the flaps turned outwards.

With the palmar fascia exposed the whole area of the palm can be explored and the various pockets of pus can be seen and curetted. Free access is given to examine and, if necessary, open the tendon sheaths. There is little danger of cutting the larger vessels and nerves, for they can be seen and avoided.



After the operation is completed the bursa is packed with gauze which has been wrung out in hot bichloride solution (1–5,000). The skin flaps are allowed to remain outside of the packing. The whole hand is then done up in an antiseptic poultice.

As a daily dressing the poultice is removed and the whole hand, with the packing still in place, is put into a hot antiseptic bath for an hour or so. Either during the bath, or immediately after, the packing is easily removed and replaced without much pain.

After a week or two the structures in the palm become covered with bright red granulations. As soon as they appear the packing is no longer used, but the skin flaps are folded back and a dry dressing applied. Union takes place between the skin and the subjacent tissues. From day to day the edges of the flaps are drawn more closely together till they come to lie on nearly their original positions.

The diagram, "A," will give an idea of the course of the incision. The dotted line should have been made on the line of the furrows.

[1] Read before the Boston Society for Medical Improvement, January 16, 1899.

The second diagram, "B," shows how the flaps are to be turned back, and also shows how, by the splitting up of the palmar fascia, free access is given to the deepest part of the palmar bursa.

Clinical Department.

PRELIMINARY NOTE ON THE PROGNOSIS OF NEPHRITIS.[1]

BY RICHARD C. CABOT, M.D., AND FRANKLIN W. WHITE, M.D., BOSTON.

The material upon which this study is based was obtained as follows:

From the records of the Massachusetts General Hospital for the last twenty years, the course and symptoms of all fatal cases of nephritis were noted, and the duration of each case, from the time of the first symptom to death, was estimated as accurately as possible. In addition to this, circulars were sent to the address of every patient who had left the hospital between 1880 and the present day, suffering from nephritis of any type. By means of these circulars, we attempted to find out the condition of the patients since leaving the hospital, and the date of death in the fatal cases. Only a portion of those to whom circulars were sent returned an answer, but the answers received were very instructive. All of the cases diagnosed in the hospital records as nephritis who returned any answer to our inquiries were followed up as carefully as possible, and in many cases the urine was examined. The number of these cases, together with the fatal ones, is 332.

In addition to these, we have a considerable body of data, sent us with great kindness by a large number of physicians to whom we wrote, asking whether they had ever known a case of chronic nephritis to recover, and also how long they had ever known a case of nephritis to last. This data furnished us details of 191 more cases, making a total of 423 in all.

We were stimulated to make the above investigations by the indefiniteness and disagreement of the statements in the text-books on the subject of the Prognosis of Nephritis, especially in its chronic form. Many writers show a strong tendency to hedge when it comes to the question: "Does a case of chronic nephritis, properly certified as such, ever recover?" Thus, for example, Rotch, in his "Diseases of Children," says of the prognosis of chronic nephritis: "Some cases, having the clinical features of the disease, have apparently recovered." Delafield, in the "American System of Medicine," says, under Chronic Diffuse Nephritis, "Recovery seems to be possible." Osler says that in chronic parenchymatous nephritis, recovery rarely takes place in a case that has persisted for more than a year, but occasionally in children, even when the disease has persisted for two years, symptoms disappear and recovery takes place. Senator,[2] speaking of chronic diffuse nephritis, says that termination in recovery is a rare exception, but undoubtedly occurs. He agrees with Rosenstein that these are usually cases which, after acute onset as a result of infectious disease or exposure, become chronic, and after one and one-half or two years, end in recovery, the urine becoming entirely normal. An entire *restitutio ad integrum* of all the kidney tissue does not occur, but this is not indispensable for complete functional recovery. He also says that death is invariably the result in interstitial nephritis where the typical contracted kidney is developed, and the heart hypertrophy is marked. Recovery (functional) is possible, and under proper treatment is not rare in the first stage, that is, as long as no sign of heart or vessel lesion has developed.

Strümpell, in his last German edition, speaking of chronic diffuse nephritis, says that complete recovery undoubtedly occurs, but is rare. By the passage of the large kidney into secondary contraction "apparent healing" may occur, in which the subjective condition of the patient is almost entirely satisfactory. He considers chronic insterstitial nephritis incurable, though life may be prolonged without any considerable unpleasant symptoms for many years. Bartels, in "Zeimssens' Encyclopedia," says that chronic nephritis is incurable after a certain time, but that cases have recovered even after months of dropsy. On the other hand, Brault in the "Traité de Médicine," says that in chronic nephritis the future is always sombre; sooner or later uremia or a complication leads to a fatal ending. Tyson, also, and Loomis, in the "Twentieth Century Practice of Medicine," say that cases never recover. In Albutt's System, and in Fagge, no definite statements are made on this point.

Under these circumstances, with such variety in the opinions of the foremost writers, our interest centered about the question: "Does a case of chronic nephritis, certified as such, ever recover?"

At this point it seems best to define what we mean by chronic nephritis and by recovery.

(1) We recognize two important types of chronic nephritis: (*a*) Chronic diffuse nephritis, and (*b*) interstitial nephritis.

(*a*) By chronic diffuse nephritis we mean a disease characterized by prolonged anasarca and effusions into the serous cavities, early and pronounced manifestations of uremia, such as headache, vomiting, and dyspnea, vascular changes, such as cardiac hypertrophy and a high tension pulse, and a pale urine usually diminished in amount, containing a large amount of albumin, with an abundance of fatty elements in the sediment.

(*b*) By chronic interstitial nephritis we mean a disease of insidious onset and long course, with comparatively early appearance of the vascular changes above mentioned, and little or no edema until the heart fails, with late and usually less marked uremic symptoms, a large amount of urine of low specific gravity, with albumin present in very small quantities if at all, and a sediment containing usually only a few hyaline and granular casts.

(2) We consider a patient to have recovered when he has no subjective symptoms characteristic of nephritis, and passes normal urine.

Defining our terms in this way, we have now come to the analysis of our cases, and taking first the data from the Massachusetts General Hospital records, we find that of the total 304 cases in which a diagnosis of chronic nephritis stands recorded on the books of the hospital, and which we have been able to follow up till death, or till the present time, there are only 17 whose urine and general condition show that the patient has really recovered. In most of these cases,

[1] Read at the annual meeting of the Massachusetts Medical Society, June 13, 1899.

[2] Senator: Erkrankungen der Nieren.

although the diagnosis of chronic nephritis stands upon the books, it is difficult to see why it should have been made. From the facts recorded it was evident, in most of the cases, that the patient was rapidly improving, that the symptoms were of comparatively brief duration, and the diagnosis seemed unjustified. In a few cases, on the other hand, the long duration of the symptoms and the character of the urine indicate an undoubted chronic nephritis followed by a genuine recovery. The following two cases are among the more remarkable of our series:

Case I. Woman, age twenty-three years. Eight years ago symptoms of chronic diffuse nephritis lasting for two and one-half years, headache, vomiting, marked edema of body, face and legs, also ascites, which was tapped twice. Urine contained one-quarter to one per cent. albumin and many hyaline, granular and fatty casts. For the last six years she has been perfectly well and leading an active life. The urine examined a year ago and also this year was normal, free from casts and albumin.

Case II. Boy, age sixteen years. Chronic diffuse nephritis followed scarlet fever at the age of eight years, lasting for four and one-half years, with headache, vomiting and anasarca. The urine contained one-eighth per cent. albumin and many hyaline, granular and epithelial casts. He had several severe exacerbations. Has been perfectly well for three and one-half years and is now at work. The urine at the present time is perfectly normal.

In answer to the question, "Have you ever known a case of chronic nephritis to recover?" forty-eight of the physicians who were asked said no, and twenty-one (about one-third of the whole number) said yes. Among these latter answers are the following:

(1) Dr. J. M. Da Costa, of Philadelphia, writes of the case of a young woman, eighteen years of age, who had chronic parenchymatous nephritis of about a year's duration:

> The disease came on gradually, though there was a statement of its having followed exposure. Dropsy was a marked symptom. There was considerable albumin in the urine, and epithelial casts. She gradually recovered entirely, got married, and became the mother of five children. She was seen last year, and her urine was found to be perfectly normal.
>
> In a second case, twenty years of age, seen in consultation, the disease of the kidney followed scarlet fever at the age of eight. As a boy, he learned to test his urine for albumin, and continued to test it until he was grown up, with the result of never finding albumin absent, though not present in great quantity. He tested for it and found it only a few months before an exacerbation of the disease, coming on after exposure; in this the urine contained large amounts of albumin and tube casts. Under a rigid milk diet for three months, mild diuretic waters, iron, and other means, the dropsy disappeared, and his general condition greatly improved, but albumin remained. Pursuing treatment for two months more, the albumin gradually disappeared, and, though constantly tested for (and he was no longer on a restricted diet), none was found for some months afterwards, when he was looked upon as having entirely recovered. I never heard of a return of the disease.
>
> In a third case, in a man sixty years of age, who was dropsical for months, there was a history of the kidney disease having begun after exposure about two months before he came under observation. The urine was markedly albuminous and contained tube casts, but no blood casts or blood. Under treatment for ten weeks, the albumin was reduced to a trace, and for some little time was absent; but a few months afterward, during a period of great family distress, it was again found in the urine, though not in large amount. Under treatment it slowly disappeared, and, examining him three years afterward, not a trace of kidney disease could be detected. The patient subsequently died of phthisis, which was hereditary in his family.

(2) From Dr. Charles G. Stockton, of Buffalo, we received the following case:

> The case came under my observation in the autumn of 1890. The patient was a woman about forty-six years old, of medium height, and 240 pounds. The exact weight could not be ascertained. She had been in poor health for several years, and for the past six months had suffered from headache, dizziness, anorexia, mental confusion, irregularity of the bowels, and increased general anasarca. The aortic second sound was relatively intense and high pitched; the apex too far to the left, not palpable owing to the fat. There were no bruits. There was increased arterial tension.
>
> The first recorded examination showed about 12 per cent. albumin (by bulk), with hyaline, granular, and epithelial casts. A more complete examination was made a few days later when she voided, in twenty-four hours, 26 ounces of urine containing 27.4 grammes of urea and albumin about four per cent.
>
> Examinations were now made daily and it was found that the amount of albumin, by Esbach's method, was from two to four grammes per litre. The casts continued; sometimes the hyaline form predominated, at other times both finely and coarsely granular casts predominated, and occasionally large numbers of epithelial casts were seen. Under treatment on the 9th of January, 1891, only one-half gramme of albumin to the litre was found, and 1,136 cubic centimetres of urine were passed in twenty-four hours and the urea had risen to 30.67 grammes. This amount did not continue, and she had a number of relapses, judging from the condition of the urine. For instance, on the 14th of January there was in 1,408 cubic centimetres of urine two grammes of albumin per litre, and the same casts. On the 25th of January the urine had fallen to 768 cubic centimetres, 21 grammes of urea, two and one-half grammes of albumin per litre; no casts were found. On February 27th, albumin four grammes per litre, urea 29.23 grammes, a number of uric-acid crystals, hyaline and epithelial casts, and renal epithelium. On the 8th of March the urea had fallen to 19 grammes, albumin had risen to 4.50 grammes per litre; there were hyaline casts. On the 15th of March there were no casts found. Urinary examinations showed varying results, but on the whole about the same for some months thereafter. In September there were six grammes of albumin to the litre, 832 cubic centimetres of urine, 21 grammes of urea; no casts found. On the 11th of November a few casts, urea had fallen to 16 grammes. From this time on the casts decreased in number and were almost altogether hyaline, albumin varied. On November 19th there were five and one-half grammes per litre; December 12th, a few casts. January 3, 1892, urine 28 ounces, urea 22.4 grammes, hyaline, slightly granular casts. July 12, 1892, .75 gramme of albumin per litre, urea 22 grammes, pus corpuscles, epithelium and a few granular casts. December 6, 1892, more than two years after I first saw her, the albumin was .25 gramme per litre; one small granular cast. May 9, 1893, there was no albumin, urea 23.71, and no casts found. From this time on the urea was less in amount, the urine became more abundant; albumin was found in varying quantities, usually in traces only, and occasionally hyaline and slightly granular casts. For the past three years, I have found that the urine has been uniformly free from albumin and casts. The patient's general condition corresponded rather closely with the state of her urine. Her symptoms were somewhat promptly relieved by treatment, but there was more or less edema for at least a year after I first saw her. Her vision was disturbed in the beginning, but an eye examination showed that the retina was not affected. I have a report on the condition of the retina reaching back as far as 1888.

(3) From Dr. D. W. Prentiss, of Washington, the following note:

A case of chronic parenchymatous nephritis had been ill about six months when I first saw him. Diagnosis unmistakable; recovered in about a year. This was eighteen years ago. He is still well and has been working at his trade ever since. Theory of recovery: that but one kidney was affected.

(4) From Dr. G. Baumgarten, of St. Louis, the following:

In August, 1894, the patient had edema of the face and hands. In October, 1894, extensive anasarca was present; urine about normal in quantity, 1.015, one and one-half to two per cent. of albumin, granular casts, leucocytes, no blood. December 25, 1894, much better; anasarca about the same, urine one and one-half per cent. albumin, many casts. January, 1895, dropsy began to disappear; returned to work. May, 1896, feels well; urine 1.029, with a trace of albumin and few casts. April, 1897, excellent health; urine free from albumin and casts; has remained well to this day.

Other physicians who have known cases of chronic nephritis to recover are H. C. Wood and J. P. C. Griffith, of Philadelphia; Beverly Robinson, J. S. Billings, and G. L. Peabody, of New York; J. B. Herrick, of Chicago; E. L. Trudeau, of Saranac, and W. S. Thayer, of Baltimore.

In addition to our recovered cases there are nine patients who are at work and in good health at the present time, despite the presence of albumin and casts in greater or less quantity in the urine. The duration of these cases from the first symptoms suggestive of nephritis up to the present time is as follows: One for five months, two for five years, one for seven years, two for eight years, one for ten years, one for eleven years and one for twelve years.

Many of these latent cases were very striking. The people were able to work hard and steadily for years at a time without interruption, and were entirely free from any disagreeable signs or symptoms, while at the same time the urine contained a trace to one-quarter per cent. of albumin and an abundance of casts.

Among the cases of which notes were sent us by other physicians are the following:

Dr. Franz Pfaff, of Boston, says:

I have under observation a patient who has had nephritis for twenty-five years. The urine shows, as the result of repeated examinations, the following characteristics: amount 1,680 cubic centimetres; specific gravity 1.009; albumin very large trace; urea 1.13 per cent.: hundreds of casts in large slide, hyaline, fine granular, coarse granular, a few very highly refracting. Many of the casts are fatty and had renal cells adherent.

Dr. Wharton Sinkler, of Philadelphia, sends the following cases:

(1) Mrs. W. had puerperal nephritis and lived twenty-five years with it. The urine always contained albumin.

(2) Mr. E. has had nephritis for about twenty years. It began with an acute attack, with bloody urine. He is still in fair health, though the urine contains albumin.

Dr. Isaac Adler, of New York, sends the following:

I have under observation a case of chronic parenchymatous nephritis which has lasted for twenty-six years, and still shows but little disturbances of general health; no edema; no ascites. The urine contains, on the average, two per *mille* of albumin (Esbach), with granular and fatty casts.

Dr. Alfred Stengel, of Philadelphia, says:

I have under my care two physicians. One has had albumin, casts, and the general symptoms suggestive of chronic interstitial nephritis for ten years to my knowledge. He himself believes that he has had it for twenty years, having discovered albumin in his urine as long ago as that.

Another case which occurs to me is a lady who has had nephritis certainly for twelve years. Lately, there has been a little swelling of the feet, but this is the only symptom I have ever discovered suggestive of nephritis.

Dr. James Tyson, of Philadelphia, writes:

Recently I was asked for an opinion in the case of an army officer who had an acknowledged uremic convulsion twenty-nine years ago; returned to duty, and remained on duty until last summer, when he died of Bright's disease.

Two hundred and sixty-nine of our cases have died. The average duration of these fatal cases from start to finish was nineteen months. Forty of our cases lasted less than two months from the first symptom to the time of death. One hundred and fifty-two cases lasted from two months to two years, and 46 cases from two to five years. The longest cases in our series are seven, ten, twelve, fourteen, sixteen, twenty, and twenty-three years. Of the fatal cases, 210 were of the type of chronic diffuse nephritis under which we include those ordinarily classed as chronic parenchymatous nephritis; 52 were of the interstitial type.

In the list of 91 cases of long duration sent us by physicians, 27 had lasted from ten to fifteen years; 16 from fifteen to twenty years; and six over twenty years, namely: one, twenty-two years; three, twenty-five years; one, twenty-eight years, and one, thirty years.

The number of acute cases in our series was so small that it has seemed best to discard them. It is a notable fact, in this connection, that for the last five years the number of cases diagnosed as acute nephritis at the Massachusetts General Hospital has steadily diminished. We interpret this to mean that cases formerly called acute are now considered as an acute exacerbation of a chronic case.

RELATION BETWEEN ETIOLOGY AND PROGNOSIS.

The nine cases in which there was a distinct history of lead poisoning have generally run a comparatively long course. The same is true of the 16 cases in which syphilis occurred. Some of the shortest cases, if we are to judge simply by the duration of definite symptoms, were those associated with arterio-sclerosis, in which fatal uremia came on out of a clear sky and killed the patient within a week.

Curiously enough, the 57 cases in which the only possible etiological factor obtainable was heredity; that is, a family history of nephritis, dropsy, apoplexy, heart disease, or phthisis, seemed to run a relatively long course.

We were unable to observe any relation between the duration of cases and the occurrence of such etiological factors as abuse of alcohol, infectious diseases, pregnancy, or exposure to cold. In the vast majority of our cases no cause of any kind could be traced.

EFFECT OF COMPLICATIONS UPON PROGNOSIS.

Complications were the cause of death apparently in 44 cases out of our 332. Pneumonia and pericarditis were the most frequent of these and phthisis next. Pneumonia and pericarditis have occurred with about equal frequency, and our statistics indicate that pneumonia is equally common as a cause of death in cases

of short and of long duration, while pericarditis seems more apt to carry off a patient at a comparatively early stage of the disease. Thus of the 11 cases ending fatally with acute pneumonia, five cases had a duration of less than two years, and six cases of two years or more. On the other hand, only two of the 15 cases ending with acute pericarditis had a duration of two or more years.

As cases of nephritis get on past the first year the dangers of such complications as cerebral hemorrhage, hemiplegia, and gangrene increase.

RELATION OF DROPSY TO PROGNOSIS.

It has been said by good authorities that the prognosis in diffuse nephritis is worse in cases where dropsy is marked, but in 47 cases of our series, in which no dropsy occurred, the average duration was ten months, compared to twenty-three months, which is the average duration of the cases in which dropsy was present. In short, the course of the disease in the cases of diffuse nephritis without dropsy was less than half as long as in the cases with dropsy.

Dropsy is not sufficiently common in interstitial nephritis to be of much prognostic value.

RELATION OF RETINAL CHANGES TO PROGNOSIS.

Good authorities state that cases of chronic nephritis rarely last more than two years after the presence of hemorrhages in the retina. This is borne out by our series of cases, of which only one lived over two years from the time at which hemorrhages were seen in the fundus oculi. In this case, however, the patient lived five years and seven months, after the date at which retinal hemorrhages in both eyes were observed by Dr. Wadsworth at the Massachusetts General Hospital.

CARDIAC ENLARGEMENT AND PROGNOSIS.

Occurrence of hypertrophy of the heart is universally acknowledged as marking the advance of the disease beyond the curable stage. This is borne out by our statistics of the 104 cases in which cardiac enlargement was demonstrated. Only three lived more than two years from the date at which the enlargement was demonstrated.

We will summarize our conclusions as follows:

(1) Chronic nephritis is not an absolutely incurable disease. Recovery occurs in rare instances.

(2) Chronic nephritis may exist for a long series of years without causing any apparent constitutional disturbance.

(3) The average duration in 332 cases of chronic nephritis was nineteen months.

(4) Acute nephritis is less common than has been supposed; many cases formerly diagnosed as such have been shown to represent exacerbations in chronic nephritis.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

REGULAR meeting, January 16, 1899.

DR. WM. A. BROOKS, JR., presented an

OPERATION FOR PALMAR ABSCESS.[1]

This was illustrated by a dissection, and a patient operated upon in the method described.

DR. M. H. RICHARDSON read a paper on

THE SURGICAL TREATMENT OF ESOPHAGEAL DIVERTICULA.

DR. W. B. HILLS read a paper on

THE PROTEIDS OF THE URINE.[2]

DR. WOOD: There is hardly anything to be said in addition to what Dr. Hills has given us in regard to the globulinuria and the so-called peptonuria. It has, of course, for a long time been well known that globulins have been present with serum-albumin in the urine of almost all cases of so-called albuminuria. There is one set of cases, which I did not understand Dr. Hills to include, in which one pure globulinuria was found in a series of 40 cases, and the statement has been made that the relative proportion of globulins increases as improvement takes place. This would make a very interesting subject to follow up, and I hope Dr. Hills will continue his work in that direction, particularly with acute nephritis, and in cases of simple improvement in interstitial disease of the kidney. One author has mentioned that the largest proportion of globulin was found in cases of interstitial disease of the kidney and in cases of passive congestion secondary to heart trouble. With reference to what has been called peptonuria, which Dr. Hills has shown us is very largely due to the presence of proteoses in the urine, the important point seems to me to be that this condition has been shown to be caused by the retrograde metabolism of the cell elements, and is found in cases of resorption of pus and in cases of extensive extravasation of blood, etc., and also in cases where any tissue whatever is undergoing unusual retrograde metabolism, as in subinvolution of the uterus, and in pneumonia, as reported by Dr. Hills. I would add that in the cases of true albumosuria, where there are large quantities of albumose present and of which I have seen three cases, the albumose appears to be, in both cases which have been investigated, very largely in the form of nucleo-albumose. The albumose in those cases has contained a very large proportion of phosphorus.

DR. HILLS: I think Dr. Wood referred to certain cases of hyperemia dependent upon heart disease. Those cases, if I remember correctly, were reported by Maguire, and I did not call particular attention to them, because other investigators, Paton for instance, were not able to confirm the observation. I remember the fact as you suggest it.

MAINE MEDICAL ASSOCIATION.

FORTY-SEVENTH ANNUAL MEETING, HELD AT BANGOR, JUNE 7 AND 8, 1899.

THE Association met in the Common Council chamber of the City Building at 10.15 A. M., Wednesday, June 7th, the President, DR. C. O. HUNT, of Portland, in the chair. Prayer was offered by the REV. C. H. CUTTER, of the First Parish Church.

The Treasurer's report showed the usual satisfactory financial condition of the Association, having a cash balance of $2.433.39.

DR. R. L. GRINDLE, of Mt. Desert, reported ver-

[1] See page 133 of the Journal.

[2] See page 125 of the Journal.

bally the case of a patient who had three successive attacks of puerperal septicemia, successfully treated by the intra-uterine application of glycerine in suppositories.

DR. B. F. BRADBURY, of Norway, who was a brigade surgeon at Chickamauga, read a paper on

A DIVISION HOSPITAL AT CHICKAMAUGA.

DR. CHAS. D. SMITH, of Portland, read a paper on

TREATMENT OF CASES OF CHICKAMAUGA TYPHOID AT THE MAINE GENERAL HOSPITAL.

SURGEON BRADBURY'S paper called special attention to the efforts made by Surgeon-General Sternberg, by preliminary warning and instruction, to avert the epidemic which swept Camp Thomas. The story of overworked medical officers, insufficient supplies because of defective transportation, was the same already so many times repeated.

DR. O. DE S. DAVIES, of Augusta, read a paper on

NEURASTHENIA.

AFTERNOON SESSION.

DRS. F. W. ANTHONY, of Haverhill, and E. W. CUSHING, of Boston, were introduced as delegates from the Massachusetts Medical Society. Both gentlemen subsequently participated in the discussions and contributed not a little to their interest.

DR. F. W. LAMB, of Tilton, was introduced as a delegate from the New Hampshire Medical Society.

The President's Address upon matters of historical interest to the Association was delivered by DR. C. O. HUNT, of Portland. It reviewed medical work in Maine since the last meeting at Bangor in 1869.

By request of many members it was voted to instruct the Board of Censors to fix the date of the next meeting so as not to conflict with the date of the meeting of the American Medical Association.

DR. J. K. PHILLIPS, of Bangor, read a paper on

THIRTY APPENDECTOMIES,

and presented beautifully prepared specimens of appendices from all the cases with detailed histories.

In discussion, DR. ALFRED KING, of Portland, pointed out thirty-one conditions which have been mistaken in diagnosis for appendicitis, and urged early operation, especially in the doubtful cases.

DR. S. C. GORDON, of Portland, insisted upon treatment of the acute attack with salines, reserving operation for the interval, claiming that more than 90 per cent. of cases so treated recover from the first attack.

DR. GEORGE F. LIBBY reported a series of cases of middle-ear suppuration successfully treated by application of acetanilid.

EVENING SESSION.

DR. F. J. TAYLOR, of Pittsfield, read a paper on

THE THERAPEUTICS OF WHOOPING-COUGH,

laying stress on the advantages of vaporized formalin to allay the paroxysms.

In discussion it was brought out that in Maine, and especially Penobscot County, the mortality from whooping-cough was greater than that in measles or scarlatina.

DR. A. D. SAWYER, of Fort Fairfield, read a paper on

DISEASES OF THE UPPER AIR PASSAGES.

A series of seven-minute papers presented for discussion

LOBAR PNEUMONIA IN ITS CLINICAL VARIETIES, ITS SYMPTOMS, COURSE AND DURATION, ITS MEDICINAL TREATMENT AND ITS NON-MEDICINAL TREATMENT.

The discussion was postponed to listen to a paper read by invitation, from DR. E. W. CUSHING, of Boston, on

DISORDERS OF THE MENOPAUSE.

SECOND DAY. — MORNING SESSION.

The Association met at 9.45 o'clock, and adopted a standing rule providing for an annual dinner under the management of a committee appointed by the Association, individual members purchasing tickets and the Association bearing the cost of preparation and the entertainment of invited guests. Heretofore entertainment has always been at the expense of local members where the meetings were held.

DR. JAMES A. SPALDING, of Portland, read a paper on

SOME SEQUELÆ OF INFLUENZA, WITH SPECIAL REFERENCE TO THE EYE AND EAR.

The annual election of officers followed. Dr. B. T. Sanborn, of Augusta, superintendent of the Maine Insane Hospital, was the unanimous choice for President. Other officers are First Vice-President, Dr. B. F. Bradbury, Norway; Second Vice-President, Dr. W. L. Hunt, Bangor; Treasurer, Dr. Augustus S. Thayer, Portland; Recording Secretary, Dr. Charles D. Smith, Portland; Corresponding Secretary, Dr. A. D. Sawyer, Fort Fairfield.

Board of Censors: Drs. John F. Thompson, Portland; Arthur S. Gilson, Portland; Hiram Hunt, Greenville; John E. Walker, Thomaston; Gilbert M. Elliott, Brunswick.

Committee on Publication: Drs. Chas D. Smith, (*ex officio*), Portland; W. B. Moulton, Portland; E. J. McDonough, Portland; Geo. A. Coombs, Waldoboro; H. H. Purinton, Lewiston.

Business Committee: Drs. B. B. Foster, Portland; Stanley P. Warren, Portland.

The Secretary reported as deceased during the year, Drs. F. C. Hall, Lisbon Falls; Geo. Z. Higgins, Strong; J. M. Jonah, Eastport; H. C. Levensaler, Thomaston; C. J. Milliken, Cherryfield; A. P. Snow, Winthrop; D. D. Spear, Portland, and not previously reported, Dr. W. N. Adams, Brunswick.

DR. S. C. GORDON, of Portland, introduced the subject of the

ABUSE OF HOSPITAL CHARITY BY PEOPLE ABLE TO PAY,

and offered the following resolution:

Resolved, That charity work for people able to pay should cease in the institutions of this State.

Dr. Gordon said what was desired was an expression of the sentiment of the Association, which might be presented to the directors of the different hospitals.

In the discussion it was brought out as the sentiment of the Association that if some plan could be devised by the management of the hospitals whereby people able to pay could be required, in addition to the fixed charges for ward and nursing, to pay the same fees for medical and surgical work as they would at home, such fees in all cases to go to the treasury of

the institution and not to individual members of the staffs, the unequal competition on the part of the hospitals would be avoided or greatly lessened.

It was also apparent that the Association believed the plan for such an arrangement ought to be made by the institutions, and that the burden ought not to be laid on the profession.

The opinion was also expressed by Dr. C. O. Hunt, superintendent of the Maine General Hospital, that there were some difficulties in the way of arranging a scale of prices, to meet the different classes of paying patients. More than 90 per cent. of the patients who come under this class at the Maine General Hospital are from the small back towns, are of slender means and come with letters from their physicians asking for reductions in rates for their benefit. How should the standard be fixed? How was the superintendent to know whom to favor, and how was he to determine the ability of one person to pay more or less than another? He believed the principle of the resolution to be right, but did not think the remedy so easy as it seemed to many.

The resolution was given a unanimous passage. The Secretary was instructed to acquaint the presidents of other New England medical societies with this action.

Dr. S. C. Gordon, of Portland, read a paper on

CONSERVATIVE GYNECOLOGY,

based upon the ground that whatever conserved the health of the woman and cured her disease in the quickest and most complete way was the most conservative surgery. This he believed to be by complete instead of partial removal of the uterus and adnexa, for diseases of those organs.

Dr. S. H. Weeks, of Portland, read a paper advocating the

ABDOMINAL ROUTE IN PELVIC SURGERY OVER THE VAGINAL

in the greater proportion of cases in which the uterus or parts of the uterus and appendages are removed.

Dr. M. H. Richardson, in discussion, said carcinoma of the body or cervix was the one condition which made the vaginal route preferable, because one could draw away from the wound and the peritoneum a sloughing septic mass, instead of drawing it through and over it.

The evening session was held in City Hall at 8 o'clock. Reports were received from delegates to other medical societies and were referred by title to the Committee on Publication.

The Board of Censors made its final report as follows:

Bangor, Maine, June 8, 1899.

To the Officers and Members of the Maine Medical Association:

Gentlemen, — The Board of Censors desires to make its final report, embodying the following appointments and recommendations:

It is recommended that the next annual meeting of the Association be held in Portland, on Wednesday, Thursday and Friday, June 13, 14 and 15, 1900.

It is recommended that the selection of orator be left to the chairman of the next Board of Censors, with power.

The following appointments are made:

Visitors to the Maine Insane Hospital: Drs. O. C. S. Davies, Augusta; W. P. Giddings, Gardiner; W. B. Small, Lewiston.

Visitors to the Portland School for medical instruction: Drs. J. D. Cochrane, Saco; W. K. Oakes, Auburn.

Visitor to Medical School of Maine, (two years): Dr. J. M. Wakefield, Warren.

Delegates to American Medical Association: Drs. Alonzo Garcelon, Lewiston; S. C. Gordon, Portland; D. A. Robinson, Bangor.

New Hampshire: Drs. Chas. D. Smith, Portland; J. A. Randall, Old Orchard; F. L. Davis, Biddeford; A. Millett, Searsmont.

Vermont: Drs. W. D. Williamson, Gorham, N. H.; John D. Holt, Berlin, N. H.; D. H. Kelley, Mattawamkeag.

Massachusetts: Drs. J. K. Phillips, Bangor; Walter L. Hunt, Bangor; H. P. Merrill, Portland.

Rhode Island: Drs. R. L. Grindle, Mt. Desert; S. J. Bassford, Biddeford.

Connecticut: Drs. H. H. Smith, Whitneyville, Ct.; S. B. Hunter, Machias.

New York State Medical Association: Drs. Daniel McCann, Bangor; George A. Phillips, Ellsworth; Augustus S. Thayer, Portland.

New Brunswick: Drs. Charles E. Williams, Houlton; A. D. Sawyer, Fort Fairfield.

Maritime Medical Association: Drs. D. B. Myshrall, Portland; Stephen E. Webber, Calais.

Delegates to the Pharmaceutical Convention, 1900: Drs. C. O. Hunt, Portland; A. Mitchell, Brunswick; Ad. S. Thayer, Portland.

Committee to arrange for entertainment at next annual meeting: Drs. H. H. Brock, Portland; J. W. Bowers, Portland; John F. Thompson, Portland.

It is recommended that the President and Secretary have power to grant credentials to members wishing to attend the meeting of the American Medical Association as delegates, and to fill vacancies occurring in delegations to other State societies.

Also, that the appointment of delegates to county societies be left to the President and Secretary, with power.

It is also recommended that applications for membership received this year for the first time and not acted upon be referred to the next Board of Censors.

The report was accepted and its recommendations adopted.

Dr. Maurice H. Richardson, of Boston, then delivered the annual oration upon the subject of

ACUTE ABDOMINAL SYMPTOMS REQUIRING IMMEDIATE SURGICAL INTERVENTION.

The thanks of the Association were extended to the orator for his valuable address, and a copy requested for publication.

After the usual votes of thanks to retiring officers, the local committee and the city of Bangor, the thanks of the Association were extended to the Penobscot County Medical Society, which, through its members residing in Bangor, had entertained the Association during its stay.

The Association then adjourned to the second Wednesday in June, 1900.

Dr. D. A. Robinson, on behalf of the Penobscot County Medical Society, extended to the Association an invitation to remain and partake of a collation which had been prepared in the hall.

It had been the intent of the committee to have entertained the Association at the Niben Club a few miles out of town, after the session of the afternoon, but rain had necessitated the abandonment of this plan.

The meeting was one of the best for many years, both in the character of the papers and the attendance, which was exceptionally large.

During the session the censors recommended and the Association elected thirty-one new members.

The next meeting will be held in Portland in 1900, on the second Wednesday, Thursday and Friday in June.

AMERICAN ORTHOPEDIC ASSOCIATION.

THIRTEENTH ANNUAL MEETING, HELD IN NEW YORK, MAY 31, JUNE 1 AND 2, 1899.

FIRST DAY.

DR. W. R. TOWNSEND, of New York, delivered the

PRESIDENT'S ADDRESS.

He described the development of orthopedic surgery, as indicated by hospitals and dispensaries for such work, in and about New York City. He said that the pioneer institution had been established in 1866, largely through the efforts of the late Dr. C. Fayette Taylor. This subsequently moved to the present site of the New York Orthopedic Dispensary and Hospital. In 1870 the Hospital for Ruptured and Crippled had been ready for occupancy. Its founder, the well-known and indefatigable worker in this field, Dr. James Knight, died in 1887, after many years of unremitting labor for his chosen specialty. The present institution had been recently supplied with the most modern operating equipment, together with pathological and bacteriological laboratories. Altogether there were more than five hundred beds for orthopedic patients in New York City, and during last year about fifteen thousand out-patients were treated.

DR. CHARLES FAYETTE TAYLOR.

DR. E. H. BRADFORD, of Boston, presented a memorial address on the life and labors of this eminent orthopedic surgeon.

THE FORCIBLE CORRECTION OF LATERAL CURVATURE.

DRS. E. H. BRADFORD and E. G. BRACKETT, of Boston, presented this communication.

These authors asserted that it was particularly desirable in these cases to make the pressure over three points, namely, (1) Over the point of maximum curvature; (2) over the pelvis; and (3) on the neck or above the scapulæ, using of course, counterpressure at three corresponding positions anteriorly. The treatment was carried out with the aid of the hammock, or preferably the Brackett frame — a mechanical device for making the requisite pressure in the regions mentioned. Not only did this treatment reduce the deformity, but it often increased the flexibility. It was applicable to cases in which other methods could not be used, and to cases in the growing stage in which there was more or less bony change.

SOME REMARKS ON THE CLASS METHOD OF GYMNASTIC TREATMENT IN LATERAL CURVATURE.

DR. WALTER TRUSLOW, of New York, presented this paper by invitation, and subsequently gave an interesting exhibition of the method at the Hospital for Ruptured and Crippled. The paper was based on his work in this field during the past seventeen months on 199 cases, varying in age from eleven to sixteen years, with a few exceptions. A little less than fifty per cent. of the cases had presented postural deformities, while the other half had had more or less fixed deformities beyond the control of the motor apparatus. The treatment had aimed to so train the muscles as to allow of their assuming an approximately normal position. Experience had demonstrated the advisability of dividing the cases into three classes, namely: (1) Children just past puberty beginning the treatment; (2) children who still required treatment but were sufficiently advanced to work with older ones just beginning; and (3) those who had acquired sufficient muscular development to engage in heavier work. The method was an adaptation of the Swedish educational gymnastic movements. These exercises had been found well adapted to the isolation and stimulation into activity of groups of muscles, thus securing correction of faulty positions and at the same time developing purposeful and intelligent co-operation. Nearly all those who had faithfully followed the treatment had exhibited decided improvement.

SOME POST-PARALYTIC DEFORMITIES AND THEIR TREATMENT.

DR. JACOB TESCHNER, of New York, presented this paper. He said that he looked upon the reaction of degeneration in the muscle as evidence only that the greater part of the muscle had been changed, and did not necessarily mean that there were no fasiculi that retained their normal properties. In a comparatively short time he had secured in each case treated far better results than had been secured by others from a much longer use of massage and electricity.

DR. J. E. GOLDTHWAIT, of Boston, in opening the discussion on the foregoing papers, said that it was well to remember that forcible correction did not cure rotary lateral curvature, though it was a valuable adjunct to other measures. According to his experience the maximum improvement had been attained by the forcible method in a short time. It was important to study the record of the pulse taken before exercising and ten minutes afterward, as this constituted an important factor in prescribing the kind and amount of exercise best suited to the individual patient. The exercise should be so regulated that the pulse-rate would be lower after than before exercise.

DR. JOHN RIDLON, of Chicago, said that in dispensary work he had obtained some excellent results by applying plaster jackets to patients while lying on a modification of Goldthwait's frame.

DR. H. AUGUSTUS WILSON, of Philadelphia, spoke in favor of manipulations carried out with the surgeon's knee as a fulcrum, and claimed that not only were the results good, but the patient was spared the terrifying effect of seeing the large and complicated mechanical devices. The patient being seated on a chair with the pelvis fixed, the back to the manipulator and the hands raised, the surgeon bent the patient laterally over his knee, and after the full amount of flexion had been obtained by rotation of the shoulders in one or the other direction, it was possible to obtain an untwisting that was exceedingly valuable in promoting flexibility of the spine and in aiding the development of the muscles.

DR. LOUIS A. WEIGEL, of Rochester, pointed out

the fact that Dr. Brackett recommended a method of correction that was maintained for a considerable time — a point of no little importance.

Dr. B. E. McKenzie, of Toronto, said that he had already published a method of correction in which the patient while suspended by the neck had lateral traction made at the point of greatest lateral curvature, while the surgeon used his hands to untwist the rotation. He favored a combination of individual and class instruction. The latter had the very distinct advantage of stimulating rivalry among the pupils.

Dr. T. E. Satterthwaite, of New York, spoke in favor of class work and of manual, as opposed to force exerted by machines.

Dr. Reginald H. Sayre, of New York, said that the patient could not voluntarily correct the deformity until adhesions had been broken up, and in a certain number of cases in which it had seemed impossible to do much by the ordinary means he had given an anesthetic and by violent manipulation had broken up the adhesions. While still recumbent, strong traction had been made and a plaster jacket applied. This treatment had been followed by little or no reaction, and in some of the cases the result had been quite good. It was essential that the patient should understand the object of the treatment so that he could co-operate with the surgeon and carry out the principles during the greater part of each twenty-four hours.

Dr. W. E. Wirt, of Cleveland, thought if more than four or five were in a class the details would be neglected. His own plan was to correct the deformity as far as possible by suspension and posture; prepare a plaster-of-Paris mould from the patient, and so alter it that the corset modelled on this mould would be somewhat over-corrected. At night the corset was replaced by a sleeping apparatus.

Dr. R. Tunstall Taylor, of Baltimore, said that where the patient was too weak or too listless to hold the body straight he used a brace, modelled after the human hand, and having the pelvis for its base of support. Exercising before the looking-glass and reference to photographs were aids to both patient and surgeon.

CONGENITAL DEFORMITIES OF THE SPINE.

Dr. Augustus Thorndike, of Boston, read a paper on this subject, illustrating it freely with anatomical and pathological plates. Speaking of spina bifida, he said that a very large proportion of these cases died within the first year of life. At present the tendency was to favor excision. Excision should be done whenever rupture had occurred or was imminent. Excision purely for the purpose of relieving paralysis was rarely successful.

THE DIAGNOSTIC VALUE OF RADIOGRAPHY IN ORTHOPEDIC AND GENERAL SURGERY.

Dr. L. A. Weigel, of Rochester, made some remarks on this subject, illustrating them with a large number of lantern slides. He did not believe that the x-rays led to such fallacious results as many claimed, but the radiograph, to be of value, must be sufficiently good to show the structure of bone, and must be free from distortion. He had been using the x-rays for two years and a half, employing for one year a coil machine, and for the remainder of that time the static machine, which he greatly preferred. In not a single instance had he produced anything even approximating an x-ray burn. This, he was sure, was solely due to the avoidance of excessively long exposures, and to operating with the vacuum tube always at least eight inches from the subject, and usually at a distance of eighteen inches. At this distance an adult foot would require an exposure of about three minutes, and that of a child about forty seconds. For the hand one minute would suffice, while for the elbow and knee the exposure should be five or six minutes.

SUBCUTANEOUS TENOTOMY: BIOGRAPHICAL NOTES.

Dr. A. B. Judson, of New York, in this brief sketch, told of the early work of Stromeyer, W. J. Little and William Detmold.

REPORT OF THE COMMITTEE ON RECORDING LATERAL CURVATURE.

This report had been previously circulated among the members. The conclusion arrived at by the committee after much experimentation and study was, that although photography presented many defects it was the best method at present known for recording cases of lateral curvature.

Dr. McKenzie, in opening the discussion on the report, remarked that he had gradually discarded every other method in favor of "honest photography."

Dr. H. A. Wilson thought nothing else could compare with honest photography, not only because of the accuracy of the record, but because the personal equation was reduced to the minimum and the results admitted of ready interpretation.

Dr. N. M. Shaffer and Dr. Lovett both advocated photography, the latter adding that in recording muscular conditions the record should state under what conditions the standing record had been made.

Dr. Henry Ling Taylor, of New York, recommended that the standing and sitting height of the patient should be recorded under the same conditions at intervals of about three months. As to the trustworthiness of the results obtained by photography, every practical photographer knew well that without any intention to deceive many inaccuracies might be introduced.

Drs. Truslow, Dane and C. E. Young described simple and ready methods of making clinical records of these cases.

After a full discussion of the report, the Association decided that it was inexpedient at present to indorse any one method of making records of cases of lateral curvature.

PIGEON TOE.

Dr. W. Burton Hopkins, of Philadelphia, presented, by invitation, a paper on this subject, in which he described his ingenious swivel and spring device for correcting pigeon toe. The arrangement could be readily imbedded in the heel of the shoe, and as now made did not easily get out of order. Its action was to throw the foot out as the person walked.

Dr. L. W. Hubbard, of New York, said that most of his cases of pigeon toe had been in young children who did not wear high heels on their shoes, and that, therefore, there was no place for the attachment of this device.

Dr. Whitman thought these cases were almost always symptomatic of weak feet, and this gave clue to the rational treatment.

Dr. Ridlon remarked that most of his cases had been associated with equinovarus.

DR. C. C. FOSTER, of Cambridge, had found that a cure could be effected by military drill, and appealing to personal vanity.

DR. H. A. WILSON said that it had been demonstrated that the action of this device was the production of ankle-joint rotation.

SECOND DAY.

A STUDY OF POTT'S PARAPLEGIA AS AFFECTED BY CORRECTION OF THE SPINAL DEFORMITY.

DR. JOEL E. GOLDTHWAIT, of Boston, presented a communication on this subject, based on the observation of 11 cases, three of them being between four and six years old. In one of the adults, a girl of twenty, the paraplegia had been almost magically relieved in a few hours by the application of the jacket, but the paraplegia had returned when the jacket had become soft.

DR. V. P. GIBNEY, of New York, referred to the case of a man upon whom Dr. Abbe had performed laminectomy, and had removed from the spinal canal a mass of granulomatous material, with the result that the cord had immediately begun to pulsate again, and its color had been improved. The man had steadily improved since the operation, and was able to sit up, although he had not yet essayed to walk.

DR. SHERMAN was inclined to suspect that in the case in which there had been such sudden and wonderful improvement in the paralysis there was a hysterical element.

DR. R. W. LOVETT, of Boston, said that it was now quite generally admitted that the pressure symptoms were due to a lymphatic edema, and if this view were correct, it might explain the sudden change observed by Dr. Goldthwait.

DR. WEIGEL cited a case illustrating the fact that although the external deformity and the paralysis were both slight, there might be such extensive destruction of the vertebræ as to render forcible correction an exceedingly hazardous procedure.

DR. GOLDTHWAIT, in closing, said that in none of his cases had there been a permanent recession of the deformity, although all had been relieved. He did not believe the case exhibiting the sudden changes in the paralysis was hysterical; he had seen the same thing in several young men.

OSTEO-ARTHRITIS OF THE SPINE: SPONDYLITIS DEFORMANS.[1]

Dr. Goldthwait also presented this paper, which contained the histories of thirty-five cases. He stated that the disease belonged to adult life, but the etiology was obscure. The disease consisted in the formation of nodules on the edge of the articular cartilages, with a subsequent ossification of these nodes, and an extension of the process into the adjacent ligaments. It usually began anteriorly and to one side. As anchylosis proceeded, pain was complained of, and the thorax became rigid. The paralysis was always partially, but never completely, recovered from. The treatment, both medicinal and hygienic, should be stimulating. Hot baths, if of short duration, were useful, but if prolonged, they caused prostration and made the patient worse.

DR. RIDLON described a case occurring in a woman of twenty-five in which, although the disease was quite advanced, he had succeeded in relieving her far beyond his expectations, by placing her under an anesthetic and subjecting the parts to violent manipulation. She now had in the lower portion of the spine about half the normal range of motion, and her chest expansion had returned almost to the normal for a woman.

DR. C. L. STARR, of Toronto, reported an interesting case in which a man of forty years, although suffering from the disease in such an advanced stage that the ribs had become anchylosed, was able to pursue his occupation as a clarionet player in a band.

OPERATIVE TREATMENT OF CONGENITAL LUXATION OF THE HIP.

DR. G. G. DAVIS, of Philadelphia, described his method of making a new acetabulum in these cases by the use of a wood-carver's gouge and an instrument known as a "rose burr."

A CASE OF DORSAL DISLOCATION OF THE HIP OCCURRING SPONTANEOUSLY DURING THE COURSE OF AN ACUTE OSTEOMYELITIS OF THE NECK AND SHAFT OF THE FEMUR.

DR. W. H. TAYLOR, of Philadelphia, reported this case. The patient, a boy of thirteen, had been injured, apparently only slightly, while playing football, but after a short time he had begun to get worse instead of better. A few weeks later, examination under an anesthetic showed that, as a result of an extensive osteomyelitis, a true spontaneous dislocation had occurred. The exact time of the occurrence of the dislocation was not known. It was not impossible that if the distention of the capsule prior to this accident had been recognized and relieved, the dislocation might have been prevented.

REDUCTION OF CONGENITAL HIP DISLOCATION BY THE LORENZ METHOD.

DR. W. E. WIRT, of Cleveland, reported two cases treated by the bloodless method. The first one had done well, but during his absence as naval surgeon during the late war, the child had fallen into the hands of a surgeon in Cincinnati who had insisted that the joint was perfect and that there was no further need for protective apparatus. In about six days the dislocation had returned. On his return home Dr. Wirt had operated again, with good result.

CONGENITAL DISLOCATION OF THE HIP.

DR. HARRY M. SHERMAN, of San Francisco, read a paper on this subject. He had done the bloody operation on nine hips. In three of these the luxation had relapsed after it had been supposed that there was permanent anchylosis; in two or three good motion had been secured; in the others the reductions had been stable, but anchylosis had occurred. He was inclined to attribute this anchylosis to granulation tissue springing up from the exposed cancellous tissue and encircling the head of the bone. He had subjected thirteen joints to treatment by the bloodless method of Lorenz, with varying results. In seven the luxation had returned. He preferred now to satisfy himself by incision and digital exploration that the head of the bone had been certainly placed in the acetabulum. He proposed to try to *punch* out an acetabulum in an upward and inward direction, thus securing sufficient depth without exposing so much cancellous tissue.

(To be continued.)

[1] See page 128 of the Journal.

Recent Literature.

Hand-book of Materia Medica for Trained Nurses. Including Sections on Therapeutics and Toxicology and a Glossary of Terms, with Dose and Use of Each Drug. By John E. Goff, Ph.G., Apothecary in the Rhode Island Hospital, Providence. Philadelphia: P. Blakiston, Son & Co. 1898.

This is a compactly arranged and clearly written book of 235 pages. The writer's experience as a pharmacist has enabled him to give most useful rules for the handling of drugs and he has taken pains to emphasize those points which are most desirable for a nurse to know. The first section is devoted to officinal drugs and preparations, and the second section relates to the chemistry of the subject. Short chapters on therapeutics and toxicology and a glossary of 65 pages complete the volume. Questions at the close of each chapter help the reader to fix the most important facts.

The work is most satisfactory as far as it goes, but it seems unfortunate not to combine more therapeutics with the materia medica. To nurses as well as doctors materia medica of itself offers little attraction, because their interest lies in its application. A book, therefore, which combines the two subjects will appeal to them more strongly and in the limited time at their disposal will be more suited to their requirements.

Lessons in Hypnotism and the Use of Suggestion, based upon the Neuron Motility Hypothesis. By Leslie J. Meacham. Pp. ix; 192. Cincinnati, O.: The Bishop Publishing Co.

This is the second edition of this book. In the preface the author states that adverse criticisms of the earlier have been few and slight. Our suspicion is that this may have been due to a somewhat uncritical attitude on the part of reviewers, rather than to the excellence of the book. In the first place, the author unequivocally gives himself over to the neuron motility hypothesis, which he erroneously states was first presented by F. X. Dercum, of Philadelphia. Having accepted the theory the author finds many subtle problems answered. For example, he writes, p. 39, "The process movement theory, however, renders psychological problems that hitherto have seemed inexplainable as demonstrable as the simplest proposition of Euclid," and again, p. 45, "An act of perception, therefore, consists of changes in the relation of cortical neurons with one another, these changes corresponding to and depending upon certain physical impacts upon the sensory organs." Sleep is disposed of as "a condition of neuron plasticity."

Such statements as these do not lead us to look with over-much confidence on the theoretic chapters of the book. On its practical side the book may hardly be called original, but this portion is a vast improvement on the "Theory." There are many suggestions which, no doubt, would be of value in practice.

The book is embellished with a number of reproductions of photographs illustrative of methods of hypnosis. The author is evidently much interested and well informed on the subject of which he writes, and on the whole, brings to bear in its treatment a scientific spirit, if not scientific exactness.

THE BOSTON

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A CRITICISM OF THE PROPOSED CHANGE IN THE CURRICULUM OF THE HARVARD MEDICAL SCHOOL.

In our editorial communication of June 8th we spoke of the proposed new curriculum at the Harvard Medical School. The essential feature of the change is, in the first place, concentration on one main subject of study, and in the second place, as a natural consequence, a more logical sequence of the fundamental branches, such as anatomy, physiology and patholgy, thereby conducing to greater ease both of teaching and learning.

That such a plan, somewhat radical in character, should escape criticism, is neither likely nor desirable. As we previously urged, experience alone can ultimately determine the wisdom and effectiveness of the suggested scheme. In the meantime candid criticism and an expression of other points of view must be welcomed. Such a criticism has recently appeared in the *British Medical Journal* of July 22d, under the heading, "The New Medical Curriculum at Harvard." The writer expresses interest in the new departure, but on the whole regards it as a somewhat retrograde movement. After quoting the outlined plan, as detailed in our editorial already referred to, he continues as follows: "While we have no wish to prejudge the subject, it seems to us impossible to believe that anatomy and physiology can each be learnt in four months. The mere dissection of the body would, we should have thought, be impossible in the time, and anatomy cannot be learnt — at least as we learn it here — without much reading, nor remembered without repeated observation. We cannot but wonder how much anatomy the student, who has not thought of it for a year and a half previously, will command when he goes into the wards. We have often urged that for the proper study of anatomy and physiology it is desirable that nothing else should be studied during the first year and a half, and here is a proposal that the whole of these vast subjects should be finished in two periods of four months each. There

will be no means of testing or comparing the results, for the examinations must of necessity adapt themselves to the new level, and the abiding knowledge to be employed in practice, which is the thing of real importance, can hardly be tested at all. Even though a student be able to pass fairly at the end of January, when it appears the examination in anatomy will be held, it is most unlikely that learning so hastily crammed can be properly assimilated, or form a sound and permanent acquirement."

Several of these statements are worthy of comment. To begin with, we quite agree with the *British Medical Journal* that anatomy and physiology cannot be learned in four months, or, indeed, in as many years. It is, in fact, a mistake to speak of such progressive sciences as ever being learned; our knowledge of them, notably of physiology, must always be relative. The argument of the advocates of the new scheme simply is that the essential rudiments of these sciences may be better taught and learned in four months of concentrated effort than in a year or more of unconcentrated study, and not only that, but that actually more hours may be gained by the new method than was possible as the subjects were before taught, at least at the Harvard School. Just why a student should be more likely to forget his anatomy or physiology, conscientiously studied for four months, than if studied for a year or more, in a less thorough manner, it is hard to see. The value of such study must lie rather in methods used and in the trend given the student's mind than in a mere collection of facts, to which unfortunately such sciences are too often degraded. With the enormous growth of detail, which the last few years has witnessed, it is evident that the elementary student should only be called upon to master principles. These he will always need, and facts, merely as facts, may well be relegated to a subordinate place in his mind. We cannot, therefore, regard the argument of our contemporary as in any way valid, when it wonders "how much anatomy the student, who has not thought of it for a year and a half previously, will command when he goes into the wards." If he has been properly taught, the student should always be able to command what he needs at a given time, just as the practitioner does, and concentration of attention can in no way diminish this possibility, so far as we can see. Nor do we think that "learning so hastily crammed cannot be properly assimilated." Again, if proper methods of study are inculcated, the facts will take care of themselves.

The error of all such arguments seems to us to lie in the failure to appreciate that the essence of preliminary medical education, as of all other education, lies in its capacity to train the mind to future accomplishment, rather than to make it merely a storehouse of facts. As Charles Sedgewick Minot puts it, "We must teach how to learn." It is probable that the new plan of concentration and gradation will tend to bring this end to pass; if so, it will have accomplished its main purpose. As we have before stated, the detailed working-out of the scheme must be left to experience. If it ultimately fails, we feel confident it will not be for the reasons adduced by the *British Medical Journal*.

SANITATION IN PORTO RICO.

ONE of the most gratifying results of the American occupation of Cuba and Porto Rico has certainly been the activity of the medical branch of the service. That such activity was most urgently needed has been sufficiently apparent from the moment the real conditions were brought into public view. That it has been marvellously efficacious has been equally apparent, as the one instance of General Wood's successful encounter with yellow fever at Santiago amply demonstrates.

Most excellent work has also been done at Porto Rico toward the establishment of definite sanitary regulations. We are in receipt of a circular dated at San Juan, July 18th, which sets forth in detail the duties of the Superior Board of Health for the island. The functions of the Board are to be not only of a supervising character as regards general matters of health, but an especial attempt is to be made to study vital statistics, investigate causes of disease, including those of domestic animals, to disseminate information among the people, and to institute sanitary inspections of public institutions and places. The Board will also assume responsibility for regulations governing the practice of medicine, surgery, pharmacy and allied branches, and investigate the violation of laws governing the purity of foods, drinks, drugs and medicines. The document leaves nothing unconsidered in relation to public hygiene and if it can be carried out in detail will undoubtedly do much toward establishing a high degree of general health. Such energetic work is worthy of the highest praise, and shows what may be done under proper management.

Chief-Surgeon John Van R. Hoff, of the Department of Porto Rico, writes: "We commenced our sanitary part of the white man's burden by vaccinating 180,000 of the inhabitants and manufacturing the virus to do it."

MEDICAL NOTES.

LANE MEDICAL LECTURES. — Michael Foster, of London, will deliver the next course at Cooper Medical College, San Francisco, in 1900.

A FUND FOR BACTERIOLOGICAL RESEARCH. — Efforts are being made in France to secure by public subscription a fund for bacteriological research; 78,500 francs has already been subscribed.

APPOINTMENT OF DR. THOMAS S. K. MORTON. — Dr. Thomas S. K. Morton has been elected professor of the principles and practice of surgery in the Woman's Medical College of Pennsylvania, in succession to Dr John B. Roberts, resigned.

A STATUE OF BARON LARREY. — A bronze statue of Baron Larrey, the celebrated surgeon-in-chief of the army of Napoleon the First, was dedicated on June 8th at the Military Hospital at Val-de-Grace.

COMPULSORY VACCINATION. — The Japanese Government has decreed compulsory vaccination throughout the kingdom. We assume that the local Pooh-Bah will take care of the Japanese conscientious objector. — *Medical Press and Circular.*

OSTEOPATHY DECLARED UNLAWFUL IN PENNSYLVANIA. — We learn from the *Medical Record* that the Medical Council of the State of Pennsylvania decided on May 24th, that the practice of osteopathy within the State is illegal, and that those therein engaged are amenable to the law.

THE SPREAD OF CONTAGIOUS DISEASES. — We learn from the *Medical Record* that the Pennsylvania State Board of Health has adopted a regulation requiring teachers in school whose boards act also as boards of health to report immediately to the secretaries of such boards or to the agents designated by them all cases of contagious diseases occurring in their respective schools.

WHAT THE HUMAN BODY WILL YIELD. — A French statistician has calculated that the average human body contains enough fat to produce 13 pounds of candles; enough carbon to make 65 gross of "lead" pencils; and sufficient phosphorus to tip 820,000 matches. Perhaps he will complete his observations by calculating how many bone-handled knives one body would furnish, how many watch-springs could be made from the iron in the blood, and how much mortar could be made from the lime contained in the tissues. When he has done this we will suggest sundry other as yet unsolved problems. — *Medical Press and Circular.*

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, August 9, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 53, scarlet fever 16, measles 14, typhoid fever 17, small pox 1.

LEAD-POISONING FROM DRIVEN-WELL WATER. — The State Board of Health has recently held a public hearing at Lowell, Mass., regarding lead poisoning from driven-well water. It appears from the report that in every one of seventy-four samples of water examined a dangerous amount of lead was found. Physicians in Lowell have recently reported forty cases of poisoning of varying degrees of severity coming under their observation. The removal of lead pipes in houses through which water is obtained for drinking or cooking purposes was urged. It was further stated that a filter, similar to one now in use in Lawrence, might be built as a protection to public health.

TWO CENTENARIANS. — Mrs. Phœbe W. Crabbee, of Norwalk, Conn., has recently celebrated her one hundred and second birthday. She was the second of a family of seven children, only one of whom has died under eighty, and then through an accident. Mrs. Sally Batchelder, of Peabody, celebrated her one hundred and fifth birthday on August 8th. She is reported to have recovered from a fracture of the lower extremity which she sustained in her one hundredth year.

SANITATION OF PICNIC GROUNDS. — The State Board of Health is about to undertake an examination of picnic grounds and certain summer resorts relative to their sanitary condition. Special notice will be taken of water supply at different places where persons in large numbers habitually congregate, and sewerage systems will also receive careful consideration. It has been observed that typhoid fever is very prevalent in September and October, a fact which it is thought may be attributed directly or indirectly to the lack of proper sanitary arrangements in crowded summer resorts.

A REMARKABLE RECORD. — Helen Keller, who is handicapped by the loss of the senses of sight, hearing and the consequent inability to speak, has passed her examinations for entrance to Radcliffe College. This is, no doubt, the most remarkable example on record of the cultivation of the mind almost entirely through the sense of touch.

NEW YORK.

PROPOSED LEGISLATION REGARDING CHRISTIAN SCIENCE. — It is announced that the President of the Legal and Medical Relief Society, Mr. Sutro, has appointed the following committee (to which his own name has been added) in the matter of proposed legislation relating to Christian Science: S. B. Livingston, President of the Society of Medical Jurisprudence; Walter S. Logan, President of the New York State Bar Association; Alderman Howard P. Okie; Reynold W. Wilcox, M.D., President of St. Mark's Hospital; George F. Shrady, M.D.; Edward Lauterbach; John Sabine Smith; Thaddeus D. Kenneson, and A. Ernest Gallant, M.D. They will draft a bill for presentation in the Legislature which it is hoped will be of practical service in placing Christian Science healers and others undertaking to cure disease without visible agencies under the same legal restraints as ordinary practitioners of medicine.

ORDINANCE FOR REGULATION OF SURFACE CARS. — On Sunday, July 30th, two persons were killed by the trolley cars in Brooklyn and one in the Borough of the Bronx. This swells the list of fatalities from electric cars in the former borough to 248, and in view of the accidents that are constantly occurring in all parts of the city, an ordinance has been introduced in the Municipal Council providing for the regulation of the speed of surface cars and the compelling of such cars to stop on signal. Another section of the ordinance provides for the appointment of a commission, consisting of one electrician, one physician and one experienced employee of a surface railway, to act as a

board of examiners, from whom it shall be required that all applicants for positions on surface lines must receive certificates, both as to their physical condition and "professional" ability, in order to render them eligible for a license.

A Case of Ptomaine Poisoning. — The Hon. Carl Schurz recently had a very narrow escape from death by ptomaine poisoning, in which the attack closely resembled that which proved fatal in the case of Anton Seidl, the lamented musical authority. It is believed to have been due to some fish which he ate during a trip to New York from his summer home at Lake George. By great good fortune Dr. A. Jacobi happened to be with him at the time, and the prompt treatment which he instituted was no doubt the means of saving the distinguished patient's life.

Forestry Department, Cornell University. — Cornell University, which boasts the distinction of being the only institution of learning in the country which has a forestry department, having secured 30,000 acres of woodland in the Adirondack Mountains, near Axton, N. Y., Professors Gifford and Roth have recently been visiting the tract, inspecting the property and directing the work of the surveyors. The students in forestry, it is announced, will receive instruction in the theory of the subject from October until April, and from that time until commencement study its practical side in the Adirondacks.

Typhoid Fever at Flushing. — An examination of the drinking water supplied to the village of Flushing, in which there has been an outbreak of typhoid fever, has shown that the water is probably not responsible for the disease, and it is now suspected that the typhoid is due to polluted milk. One of the local physicians, it is said, has made the discovery that some of the cases in the hospital and ten outside belonged to families which were supplied by one milkman, and the facts have been reported to the Board of Health for investigation.

A Possible Epidemic of Poliomyelitis. — An epidemic of very unusual character has been in progress for some time among the young children in Poughkeepsie. The disease, which at the outset is characterized by considerable febrile action, is apparently infantile spinal paralysis, and if it be true, as has been stated, that in no instance has there been more than one case in a single family, its infectiousness would seem to be somewhat problematical. The physicians of the place have been naturally a good deal puzzled by the outbreak, and, on the invitation of Dr. D. B. Sheedy, Dr. Henry D. Chapin, professor of children's diseases in the New York Post Graduate Medical School, has been making an investigation of the disease. The fact that no deaths have been reported, as well as the general character of the symptoms noted, would go to show that the trouble is certainly not cerebro-spinal fever. The newspapers report that there have been as many as 150 cases, though this is probably a considerable exaggeration, and it is now stated that the disease has already made its appearance in New York. Whether this is really the case appears to be uncertain, as infantile paralysis is not classed among the affections calling for a report to the Bureau of Contagious Diseases, but Dr. Tracy, the Registrar of Records of the Health Department, is authority for the statement that no epidemic of this disease has ever been reported in this city.

A Bequest to a School for Feeble-Minded. — By the will of the late Benjamin D. Maxham, of Vineland, N. J., a legacy of $100,000, to be paid on the death of his wife, is left to the New Jersey Training School for Feeble-Minded Children, of which he was one of the founders and directors.

A Statement by Health Officer Doty on Yellow Fever. — On the occasion of the discharge from the hospital on Swinburne Island of Oscar F. Lackey, the first patient treated with his new yellow-fever antitoxin, Health Officer Doty has made a public statement in regard to the case. After stating that three subcutaneous injections of the serum, two of twenty-five cubic centimetres and one of fifty centimetres, were made, and that no other treatment was employed, he goes on to say: "From a scientific point of view, one case cannot prove the value or worthlessness of the serum. Therefore, I regard it as premature to give an opinion on this subject until a sufficient number of cases has been similarly treated, and enough evidence presented to justify it. . . . I desire to repeat the statement already made, that this department claims no discovery, either as to the isolation of the specific organism or in the production of the serum. The object of the investigation at the quarantine laboratory, which has been carried on for the last two years, is to test the value of the claim made by Professor Sanarelli, of Montevideo, that he has discovered the germ of yellow fever and has prevented and cured the disease in the human being by the use of the serum. The importance of this subject, particularly to the people of the United States, cannot be overestimated."

Miscellany.

THE CARE OF LEPROSY IN ECUADOR.

In a recent report by the United States Minister to Ecuador considerable space is given to the subject of leprosy as existing in that republic, and a monograph on this disease by Dr. Rivadeinera, in charge of the Quito Leper Asylum, is also transmitted.

According to Dr. Rivadeinera, all the lepers of the republic are segregated in the leper hospitals at Quito and Cuenca. In the former, a city of 80,000 inhabitants, there are 37 male and 40 female lepers; in the latter, a town of 30,000 inhabitants, there are 30 males and 35 females afflicted with leprosy. The climatic and local conditions of Quito do not appear to be as favorable for the spread of leprosy as in Cuenca, most of the lepers treated in the former place being brought from Ambato. The leper asylum at Quito is

supported by public charity and is only one branch of a general eleemosynary institution caring for paupers, orphans, inebriates, the insane, and other defective classes. Dr. Rivadienera has been connected with the leper hospital since 1886. He finds that the tuberculous form is much the most frequent in Ecuador, and states that at present no case of mutilating leprosy exists in that country. He observes that the disease usually develops about puberty, but states positively that some cases are congenital. He believes that heredity and contagion are the chief causes in the propagation of leprosy, and says that he has seen many cases which seemingly developed from contagion and inoculation. Dr. Rivadeinera is convinced that syphilis and leprosy are antagonistic and is positive that the latter disease can be cured if taken in the early stages. He states that in the thirteen years he has been treating leprosy in Quito fourteen patients have been discharged from the asylum as cured, "so pronounced by a board of physicians," and that two more patients are nearly ready to be discharged as cured. His treatment, he says, varies with the length of time the disease has existed, the form it has assumed and, above all, with its complications. Among the remedies successfully employed he mentions chaulmoogra. resorcin, carbolic acid and arsenical compounds, usually combined with vegetable tonics.

PLAGUE IN MONKEYS AND SQUIRRELS.

WE learn through the *Journal of Tropical Medicine* that interesting and important investigations have been made by Drs. Alice M. Cothoru and C. J. R. Milne regarding the susceptibility of certain of the lower animals to plague in India. It had been observed that several monkeys had dropped dead from trees, two of which were carefully examined.

In the first there was a bubo the size of a large cherry in the left groin, which on dissection consisted of a group of four glands, hard and purplish in color, with a good deal of edema of the surrounding tissue. From this a smear preparation was made, which showed an enormous number of organisms resembling the plague bacillus; inoculation of a tube of agar showed within twenty-four hours plague-like colonies. The spleen was much enlarged, and microscopical and culture preparations were made with the same result as from the bubo.

In the second monkey there was a small bubo about the size of a bean, with some fulness in the right axilla. The spleen resembled that in the first monkey, and gave both a good smear preparation and a growth of plague-like colonies within twenty-four hours.

In both monkeys the general appearance was similar to that observed in human subjects dead from plague. There were numerous subserous and submucous ecchymoses and the blood was dark and unduly fluid.

On December 17th the body of a gray striped squirrel was examined. There was no bubo, but the spleen was nearly three inches long, about one inch wide and three-quarters of an inch deep. A smear preparation from it showed typical bacilli in large quantities.

The importance of the fact that animals such as monkeys and squirrels are also susceptible to natural plague infection, in addition to rats, cannot be overestimated, especially in their relation to the carrying of infection from one district village to another. These squirrels and monkeys are so common in India that they might well be considered as pests.

THE HANDWRITING OF DOCTORS.

AMONG the many things that Napoleon has to answer for is the popular notion that an illegible handwriting is a mark of intellectual superiority. How far this may serve to explain the fortuitous concourse of scratches, dashes and blots which is too often handed to anxious sufferers as a prescription by medical oracles we are not prepared to say, but the fact is notorious that the writing of many doctors is of such a character that, like paleographic scripts, it can be read only by adepts. We have seen prescriptions which could be interpreted only by those who had undergone a special initiation. This obscurity may, of course, have its advantages from certain points of view, but there is always the risk that the adept may not be at hand in some critical emergency, or that the expert himself being human may sometimes be at fault. A famous counsel, learned in law, it is said, had three handwritings: one which he and his clerk could read, another which only his clerk could read, and a third which neither of them could read. If neither the doctor himself nor the chemist can read the prescription, what is to become of the patient? Doubtless he gets something, but is it what was intended? Nor is it only in prescriptions that the doctor's bad handwriting causes trouble. The Connecticut State Board of Health has lately felt itself obliged to call attention to "the inaccuracies in the tabulation of death certificates which result from the faulty handwriting of the physicians who fill them out." These certificates are said to present astonishing additions to the nomenclature of diseases, such as are not to be found in any recognized system of nosology. As specimens may be given such causes of death as "cardius hypohophy," meaning probably cardiac hypertrophy, "corrhasis of liver," for cirrhosis, "utrim fibride," for uterine fibroid, "lineape," for syncope, "neaesini," for uremia, "gortuitis," for gastritis. Clearly it would be to the benefit of mankind if doctors took a little more trouble to write plainly. — *British Medical Journal.*

METEOROLOGICAL RECORD

For the week ending July 29th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A.M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...23	30.21	63	66	60	89	78	84	E.	E.	9	10	O.	O.	
M...24	30.25	64	67	60	72	81	76	E.	E.	10	5	C.	C.	.13
T...25	30.13	62	66	58	84	96	90	E.	E.	11	4	O.	O.	.39
W..26	29.81	74	82	66	96	74	81	S.W.	W.	16	3	O.	C.	.22
T...27	29.77	80	92	69	60	81	70	W.	W.	8	13	C.	C.	
F...28	29.96	71	78	64	60	64	62	N.	S.W.	12	9	C.	C.	
S...29	29.97	74	84	64	65	71	68	N.W.	S.	2	13	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S. smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 29, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1444	702	23.38	9.80	18.48	.70	2.45
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	226	107	23.32	11.44	16.28	1.76	3.08
Baltimore	806,389	226	112	33.33	7.92	29.48	.88	—
Cincinnati	405,000	93	—	14.01	5.40	11.88	1.08	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	122	64	39.36	7.38	32.80	4.92	—
Washington	277,000	105	47	19.20	8.64	10.56	2.88	3.94
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	156,000	69	37	52.20	15.95	47.85	1 45	—
Nashville	87,754	35	13	25.74	5.72	11.44	5.72	—
Charleston	65,165	42	16	16.31	—	23.30	2.33	—
Worcester	108,240	24	16	45.76	—	41.60	4.16	—
Fall River	95,919	60	45	48.14	6.64	44.92	1.66	—
Cambridge	89,724	37	24	40.50	5.40	32.40	—	2.70
Lowell	88,641	60	41	39.94	3.32	36.63	1.66	—
Lynn	66,763	19	7	26.30	10.52	—	5.26	—
New Bedford	66,340	15	12	13.33	6.66	13.33	—	—
Somerville	66,161	13	5	7.69	7.69	—	—	—
Lawrence	57,283	27	20	48.10	3.70	44.40	—	3.70
Springfield	56,501	18	4	22.22	16.66	11.11	—	—
Holyoke	43,424	15	9	46.66	6.66	46.66	—	—
Brockton	37,278	10	5	40.00	—	30.00	—	—
Salem	36,883	24	16	54.08	4.16	54.08	—	—
Malden	34,613	14	7	50.00	—	50.00	—	—
Chelsea	33,468	13	4	7.69	7.69	—	—	—
Haverhill	32,022	13	4	23.07	15.38	23.07	—	—
Gloucester	30,589	8	4	—	—	—	—	—
Newton	29,716	11	—	36.36	18.18	27.27	9.09	—
Fitchburg	29,438	5	2	40.00	—	40.00	—	—
Taunton	28,167	20	11	45.00	—	45.00	—	—
Everett	25,538	9	5	11.11	—	11.11	—	—
Quincy	23,549	19	7	52.60	5.26	31.56	5.26	5.26
Pittsfield	22,643	7	2	70.40	—	28.56	28.56	14.28
Waltham	22,296	8	2	12.50	12.50	12.50	—	—
North Adams	20,971	14	9	35.70	—	28.56	—	—
Chicopee	17,842	10	5	30.00	—	30.00	—	—
Medford	16,511	7	4	28.56	—	28.56	—	—
Newburyport	14,915	6	2	—	—	—	—	—
Melrose	14,032	1	—	—	—	—	—	—

Deaths reported 2,872; under five years of age 1,283; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,789, consumption 248, acute lung diseases 248, diarrheal diseases 639, diphtheria and croup 47, typhoid fever 40, cerebro-spinal meningitis 23, whooping-cough 18, measles 11, scarlet fever 6, erysipelas 3.

From cerebro-spinal meningitis New York 9, Quincy 3, Boston and Washington 2 each, Cincinnati, Nashville, Lynn, Springfield, Brockton, Chelsea and North Adams 1 each. From whooping-cough New York 2, Pittsburg and Providence 2 each, Boston and Cambridge 1 each. From measles New York 7, Boston, Fall River, Cambridge, Lynn, 1 each. From scarlet fever New York 4, Boston and Baltimore 1 each. From erysipelas New York 3.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending July 22d, the death-rate was 18.4. Deaths reported 4,028; acute diseases of the respiratory organs (London) 149, diarrhœa 466, measles 126 diphtheria 83, whooping-cough 56, scarlet fever 37, fever 30.

The death-rates ranged from 7.6 in Brighton to 29.4 in Salford; Birmingham 21.1, Bradford 16.1, Cardiff 14 0, Derby 12.7, Gateshead 21.0, Huddersfield 10.6, Hull 13.6, Leeds 20.4, Liverpool 26.6, London 18.2, Manchester 22.0, Newcastle-on-Tyne 16.2, Nottingham 19.2, Portsmouth 16.9, Sheffield 26.7, Swansea 14.1, West Ham 14.6, Wolverhampton 11.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 5, 1899.

C. A. CRAWFORD, assistant surgeon, detached from the "Wabash" and ordered to the "Massachusetts."

E. J. GROW, assistant surgeon, detached from the "Massachusetts" and ordered to the "New Orleans" immediately.

M. S. ELLIOTT, assistant surgeon, detached from the Marine Examining Board August 2d, and ordered to temporary duty at the Marine Recruiting Rendezvous, New York, during leave of Passed Assistant Surgeon E. S. BOGERT, upon completion of this duty, directed to wait orders.

C. G. HERNDON, surgeon, ordered to the Museum of Hygiene for temporary duty.

J. C. ROSENBLUTH, passed assistant surgeon, detached from the "Vermont" and ordered to the "Nashville."

F. L. PLEADWELL, assistant surgeon, detached from the "Nashville" and ordered to the Bureau of Medicine and Surgery.

SOCIETY NOTICE.

AMERICAN ASSOCIATION OF OBSTETRICS AND GYNECOLOGISTS. — The American Association of Obstetricians and Gynecologists will hold its twelfth annual meeting in the assembly room of the Denison House, Indianapolis, Ind., Tuesday, Wednesday and Thursday, September 19, 20 and 21, 1899.

The Association will meet in executive session with closed doors on Tuesday, September 19th, at 9.30 A. M., for the election of new Fellows. The open session for the reading of papers will begin at 10 o'clock. Recess for luncheon at 1 o'clock P. M. Afternoon session at 3 o'clock; recess at 5.30 o'clock; evening session at 7.30 o'clock.

The morning session will begin Wednesday at 10 o'clock for the reading of scientific papers. Recess at 1 o'clock. Afternoon session at 3 o'clock. Adjournment at 6 o'clock.

At 6.30 P. M., Wednesday, the executive session will convene for the election of officers, and for such other business as may come before it under the rules.

The morning session will begin Thursday at 9.30 o'clock to continue until 1 o'clock P. M., when recess will be taken for luncheon. The afternoon session will be called at 3 o'clock and at 5 o'clock the closing ceremonies will be held. A full attendance is especially requested at the final session.

EDWARD J. ILL, *President*,
WM. W. POTTER, *Secretary*.

RECENT DEATHS.

JOHN H. GILBERT, M.D., one of the most prominent and successful physicians of Quincy, died at his home in Quincy on August 3d. He was born in Atkinson, N. H., sixty-six years ago, and was a graduate of Dartmouth and Tremont Medical Colleges. He began practice in Weymouth, where he remained ten years, when he came to Quincy. He was prominently connected with organizing the Quincy Hospital and the Board of Health In 1892 he was appointed medical examiner for the Quincy district, which position he held up to the time of his death. He leaves a widow and one son.

FRANCIS C. GREENE, M.D., a prominent physician of Hampshire County, died August 3d, at Easthampton. Dr. Greene was born in New Haven, Conn, September 2, 1827. He received his education at New Haven and his professional training at Yale. He settled at first in Holyoke. In 1853 or 1854 he removed to Easthampton and remained there till the war broke out. He was a surgeon in the U. S. Army during the war. After the war he settled for a time in New York and afterward went to Westfield. In 1868 he returned to Easthampton, and built up a successful practice. He was also prominent in local public affairs.

BOOKS AND PAMPHLETS RECEIVED.

Carcinoma of the Œsophagus with Fatal Hæmorrhage from the Subclavian Artery. By F. G. Finlay, M.D., and D. P. Anderson, M.D. Reprint. 1899.

Upon the Existence of a Minute Micro-organism Associated with Cases of Progressive Portal Cirrhosis. By J. G. Adami, M.A., M.D., F.R.S.E., Montreal.

Vital Science, based upon Life's Great Law: The Analogue of Gravitation, Agnosticism Refuted. By Robert Walter, M.D. Philadelphia: J. B. Lippincott Co. 1899.

The Medical Treatment of Typhoid Fever. The Symptomatology of Tumors Involving the Hypophysis Cerebri. By James Stewart, M.D., Montreal. Reprints. 1899.

A Contribution to the Study of Bright's Disease, with Special Reference to the Etiological Relationship of the Bacillus Coli. By Albert G. Nicholls, M.A., M.D., Montreal. Reprint. 1899.

The Surgical Treatment of Typhoid Fever. Tuberculous Disease of the Spine, Commonly Called Caries of the Spine, Angular Curvature or Pott's Disease. By G. E. Armstrong, M.D., Montreal. Reprint. 1899.

Medical and Surgical Reports of the Boston City Hospital. Tenth Series. Edited by Herbert L. Burrell, M.D., W. T. Councilman, M.D., and Charles F. Withington, M.D. Boston: Published by the Trustees. 1899.

A Text-book of Anatomy. By American authors. Edited by Frederic Henry Gerrish, M.D., Professor of Anatomy in the Medical School of Maine, Bowdoin College. Illustrated with 950 engravings in black and colors. Philadelphia and New York: Lea Brothers & Co. 1899.

Address.

ADDRESS IN SURGERY.[1]

BY ALEXANDER OGSTON, M.D.,
Surgeon-in-Ordinary to Her Majesty the Queen in Scotland; Regius Professor of Surgery, University of Aberdeen.

THE MEDICAL SERVICES OF THE ARMY AND NAVY.

In presence of an assemblage of so many representatives of the medical science of the British Empire, I have much pleasure in gratefully acknowledging the honor of being called upon to deliver the "Address in Surgery." It is a task I enter upon with a sense of responsibility, and a fear lest I should fail to do justice to the duty entrusted to me by the Council of the British Medical Association. But I take courage from the belief that you will be disposed to form a lenient judgment of any endeavor to contribute to the usefulness of the annual meeting of our Association, and because I think that the theme I have chosen for the "Address in Surgery" on this occasion is one in harmony with the high aims of our science, since it has for its design to promote the great objects for which our profession exists, those, namely, of saving the lives and diminishing the sufferings of our fellow-men.

A NEW DAY IN SURGERY.

At a time like this one cannot help being strongly impressed by the feeling that the surgical profession in our day has had much given to it, and that from it much will be required. We live in an era that can claim to be one of most exceptional, probably unique, interest. We have witnessed in it the most marvellous and rapid advances the world has ever experienced in the powers of mastering and warding off disease. We have passed through many gloomy years, in which we worked our life's work blindly and in the dark, with dread fastening on the heart as surely as the hand grasped the knife, for ever trembling before the horrors of surgical pestilence; and now we have been privileged to see the dawn of a new day when septic disease is being robbed of its terrors by the discoveries of Lister, whose great gifts to humanity, which coming generations will hereafter delight to recall, recognizing that whatever we owe to the great surgeons of the past has been but little in comparison with the benefits he has conferred on us, and through us on all mankind. And we may be sure that future ages will be very critical in their judgment of us, the present race of surgeons, and demand to know what use we made of our unparalleled opportunities, and whether we went astray amidst all the light that was given us.

THE EFFECT OF LISTER'S DISCOVERIES.

The importance of the period in which we live it would be difficult to exaggerate. For the first time in all the centuries that have flown our profession has changed from a craft into a science, a result that, though many have contributed to it, we owe mainly to Lister. Every progress made in the years of my own professional life seems to dwarf before his great discoveries, and imagination fails to grasp the limits and possibilities of the gigantic revolution which he commenced, or the unspeakable benefits it has conferred and may yet confer upon the world. The achievements of the surgeons before his day have now for the first time become fruitful and certain. Fresh fields of relieving and curing disease have been opened up at every point of our horizon, and in all the busy centres of the earth is springing up a new race of surgeons, who effect as part of their everyday work marvels of cure that even thirty years ago, had anyone ventured to forecast them, would have been looked upon as the dreams of a visionary.

THE UNSATISFACTORY CONDITION OF THE SERVICES.

While in many respects we have good reason to praise the age we live in and the way in which it has availed itself of its advantages, no one fully acquainted with the state of surgery in our land can fail to be impressed by the fact that in some quarters the changes and modifications necessitated by the progress of science are even yet meeting with obstacles that ought not to exist, and that some of our medical and surgical brethren are still hampered by systems and restrictions which must be swept away, if we are to ensure that none of our fellow-countrymen shall be denied those benefits which are now within the reach of the humblest and the poorest. I venture to believe that in the city of Portsmouth it will not be out of place — perhaps even specially appropriate, to advert to the condition of our Army and Navy Medical Services. These, since the surgical world was stirred to its depths thirty years ago by the doctrines of Lister, have been, I fear, gradually falling into a condition that cannot fail to evoke much anxiety regarding their present and future. I believe the causes of this can be more accurately pointed out than has heretofore been possible; I feel sure that, by endeavoring to do so here and now, more good is likely to be attained than would result from a similar inquiry on any less public or representative occasion; and it appears to me that the present time is suitable beyond any in the past half-century for drawing attention to the reforms that may be necessary to ensure that when the supreme moment arrives the medical departments of these services will be found adequately prepared to undertake the duties they will be called upon to discharge. We possess at the present moment an enlightened Minister at the head of the War Office, to whom we owe it that many desirable reforms have already been introduced into the Army Medical Service. We have also every reason to believe that the trend of public opinion is favorable to such further improvements as may be required in both army and navy. Recent events, too, have demonstrated that we may be unexpectedly called upon to engage with both army and navy in European or even world-wide wars, such as would put their efficiency to the severest possible test.

It is moderate and reasonable to expect that the medical departments of the army and navy shall be in a condition commanding the respect and approval of the medical profession and the public; that their officers shall be at least as favorably placed in regard to their work as their civil brethren; and that both ashore and afloat they shall be able efficiently to perform their functions in time of peace, and fully prepared for the eventualities of war. Yet no observant member of the profession, particularly if connected with one of the medical schools whose graduates used to furnish many candidates to the services of the army

[1] Read at the annual meeting of the British Medical Association at Portsmouth, August, 1899. — Abstract from advanced proof-sheets sent by the courtesy of the editor of the British Medical Journal.

and navy can have failed to observe how changed is the estimation in which they have come to be held during the last three decades. The most talented graduates have ceased to aspire to enter them, and it has by degrees come to pass that few indeed, and these as a rule of inferior qualifications, can be induced by any means to present themselves at their entrance examinations. Such a one will have noted that those medical officers who possess a few years' experience of the services, however much loyalty seals the lips of most of them and influences all, show themselves disappointed and discouraged with the professional life they have to lead, admit they have made a mistake in entering them, and would gladly, were it possible, sacrifice the years they have spent in them and quit them entirely, even for some comparatively unpromising post in civil life. He must have perceived that many of the most intelligent officers who remain in them are pervaded by a conviction that their abilities have been thrown away and their lives wasted, and that the services are not what they ought to be. He will have followed the continual endeavors made through all these years to remedy their growing want of attraction for men of ability, and the failure of these endeavors one after another. He will have learnt that year by year the medical services, especially that of the Queen's army, have become more attenuated and undermanned, so that an undue amount of foreign service, at the cost of health, is entailed on those who enter; and that hence it has become necessary to supplement the deficiences at home by employing civil members of the profession, of a class whose work unfits them for forming officers of the stamp needed in the event of war, even if their other engagements rendered it probable they would consent to be so employed. He may, perhaps, have been told that in the last year or two the post of medical officer in the army has been going a-begging, and has been hawked for presentation about the various schools and universities where suitable men might be supposed to exist. And, lastly, he may see how, when lapse of years has earned them a moderate pension, many of the medical officers, in the prime of their abilities and best working period of their lives, hasten to quit the services; but find themselves, save in the instance of a few gifted men, unfitted for any professional activity, so hopelessly have they fallen behind the acquirements of their civil compeers.

THE ARMY MEDICAL SERVICE.

It has sometimes been asserted that, in the opinion of foreign judges, our Army Medical Service is in a state of efficiency enabling it to discharge its duties in a way superior to anything that could be achieved by other countries. One must, however, discriminate. Oft-repeated experience over the very same ground has indeed taught us to conduct, in some respects, the medical part of expeditions in the jungles and swamps of West Africa, the deserts of the Nile, or the ravines of the Himalayas, in a way that probably no other power could excel or even equal. Our enemies there are poorly armed, and our casualties few. But it dare not be inferred from this that we are in a condition to deal with a war against a great power, with arms and organization at least equal to our own, in which large numbers of wounded — thousands instead of tens — must fall to be treated. That would be a most erroneous conclusion, and would not be the general verdict of either the civil profession or the ranks of the services themselves. And such of us as possess friends among foreign military surgeons, men of large experience in actual warfare, do not hear from them any such expressions of approval as would warrant very sanguine inferences. It is absolutely conclusive on this subject to recall that last year, when a deputation from the British Medical Association was received by the Secretary of State for War, its members, most of them leading authorities from our universities and medical schools, expressed themselves deliberately to the contrary effect, using expressions that ought to be well weighed as coming from those whose position enables them to form an unerring judgment. An eminent president of this Association there gave utterance to the following ominous opinion: "If there were to come a time of war it is to be dreaded that the horrors which occurred during the Crimea may be repeated." All others present spoke to a similar effect, and the Secretary of State admitted that, owing to the condition of the Army Medical Department, "only comparatively inferior men present themselves . . . the best men turning away from the Army Medical Staff . . . a very grave condition of things."

With regard to the duties in time of peace, it may be contended that these, being chiefly to maintain our army and navy in good health, are efficiently performed in the services; though I need not repeat that even these are at present carried out in the army to some extent by the aid of civil practitioners, whose other occupations unfit them for being effective and satisfactory army medical officers. But it must not be forgotten that this is not all the country expects. The duties of the Royal Army Medical Corps and Naval Medical Service involve preparation for war. This is the chief end of all departments of the army and navy; and, unless they fulfil that end, no matter how creditable they may be in other respects, they are but a pretence of what they ought to be. In this it must, I think, be admitted that they are in a condition leaving much to be desired. Attendance on minor ailments, trifling complaints, and the few serious diseases and injuries occurring among bodies of men in the prime of their age and health, selected for strength and soundness, and the other routine duties, which together constitute the whole ordinary work of the immense majority of the medical officers serving in our forces, form so great a contrast to much that would be expected of them in an active campaign against European troops that comparison between them is hardly possible. They afford the army and navy surgeon, it is no exaggeration to say, scarcely any chance of acquiring the knowledge and skill that would be demanded of him in war.

No surgeon can now, as in former days, rise suddenly out of the ranks of those destitute of special training, however eminent his natural abilities may be. He who is skilled in exercising his profession becomes so by many years of special training. No man who is but theoretically acquainted — be it in ever so perfect a fashion — with the mere doctrines of antiseptic surgery is able to step at once into the arena as a practical surgeon. He must in the first place acquire by slow and painful degrees a familiarity with methods, manipulations and procedures built up of a multitude of little details. It takes him many years to acquire these by practice, by training himself alongside of those to whom they are already familiar, by the discipline of his own

failures, and by a study and familiarity that eventually imprint them so deeply that they become a part of himself, and are carried out instinctively and unerringly under all ordinary conditions, as well as in the usual events and emergencies that continually arise in so many of the cases he treats. Septicity is an enemy of infinite variety not to be combated with success by theory alone, or by wielding a single weapon; the modern surgeon must be armed at all points, both for offence and defence, and acquaintance with his weapons and their powers is not attained save by a long course of study and training.

Even after the ordinary practice of surgery as nowadays carried out has had its foundations laid by a training in antiseptic and aseptic work, the greater part of the education of the skilled surgeon has yet to be acquired. The methods of cranial, thoracic, and abdominal surgery are necessarily, to meet the varying circumstances, so numerous, so intricate, and demand so great intellectual and manipulative skill, that only one who has spent years in constantly improving himself in them, whose mind has been fashioned by long experience and study of the problems he daily meets, and whose hands have gained by constant usage the technical facility and delicacy indispensable to success, can with impunity venture into these territories with the requisite boldness and confidence, and ensure the successful results which alone render these procedures justifiable. Such is the life-long training of the skilled surgeon of our cities and hospitals, who carries out the marvellous methods and obtains the wonderful results of modern surgery.

THE STANDARD OF MILITARY SURGERY.

A standard of work at least equal in excellence to that of the civil surgeon ought to be expected of army and navy medical officers. Senn, of Chicago, chief operating surgeon with the United States army recently in the field, and one who has done much for surgery, points this out in the following axioms:

(1) That in theory and practice military surgery is equivalent in every respect to emergency practice in civil life.

(2) That the wounded soldier is entitled to the same degree of immunity against infection as persons in civil life suffering from similar injuries.

(3) That all formal operations in war must be performed where the wounded can receive the full benefit of aseptic and antiseptic precautions.

(4) That operative interference is indicated in all penetrating wounds of the skull.

(5) That gunshot wounds of the chest should be treated under the strictest antiseptic precautions.

(6) That laparotomy in penetrating gunshot wounds of the abdomen is indicated in all cases where life is threatened by hemorrhage of visceral wounds, and the general condition of the patient is such as to sustain the expectation that he will survive the immediate effects of the operation.

These are reasonable demands, many might ask more, but nothing that falls short of some such standard can be accepted as satisfactory. Statistics prove that of all wounds in battle there are 7.4 per cent. of the brain, 7.5 per cent. of the chest, and 4.7 per cent. of the abdomen, amounting to 20 per cent. of all wounds. There must, therefore, in the next great campaign, be an enormous field of usefulness to properly-trained antiseptic surgeons, and a fearful waste of life if they be not there to occupy it. It scarcely, moreover, requires to be pointed out that gunshot wounds of other parts besides those of head, chest and abdomen offer a field for modern surgery that has scarcely yet been entered on. No extensive campaigns have been conducted since antiseptic surgery was fully introduced, but the smaller ones have shown the need for a class of surgeons more highly trained than hitherto to carry the best methods of antiseptics into the domain of gunshot wounds, where septicity is a danger greater and more frequent than in any other class of injuries whatsoever. And I am convinced from a study of wounds inflicted by modern projectiles, on which it would be out of place to enter here, that in gunshot wounds of the soft parts and extremities a very much larger proportion of lives and limbs than hitherto can be saved, and another great field of modern conservative surgery opened up by the application of improved methods and principles of treatment in the hands of those who really know how to employ them.

(To be continued.)

Original Articles.

THE VALUE OF THE PULSE IN DIAGNOSIS AND PROGNOSIS.[1]

BY HENRY JACKSON, M.D., BOSTON.

Though I have no new theory to advance as to the value of the pulse in diagnosis, yet I desire to bring the subject up at this meeting because to me it seems a matter of the greatest importance, and one perhaps that we do not consider as carefully as it deserves. The pulse is the final index of the vital capacity of the individual, and therein allows us to judge of the resistance to disease of the individual patient at a stated time: our patient may have a diseased heart, one much weakened by organic valvular disease or by degeneration of the muscular substance dependent upon disease in the heart itself or upon some toxemia, but if the heart is able to drive the blood through the system for the time at least death is not imminent. Therefore the pulse is, as stated, the final index of what the heart can do; so long as the pulse is of fair quality the system is supplied with blood and life is possible.

In diagnosis it is not my wish to discuss the value of the pulse in the various forms of organic heart disease, as for instance, the Corrigan pulse in aortic disease, and the small thready pulse of mitral stenosis, but rather to consider its value in the diagnosis of some of the more important and often obscure general diseases, especially typhoid fever, miliary tuberculosis, cerebro-spinal meningitis and other diseases of the brain and its membranes.

The pulse of typhoid fever is in uncomplicated cases not very rapid, rising somewhat with each access of fever, but averaging 90 to 100 or less in cases of moderate severity which run their course without untoward accident; under prognosis I shall speak at greater length of the inestimable value of the pulse as an index of the advent of dreaded complications and the exhaustion of the patient by the toxic effects of the specific organism of the disease.

In acute tuberculosis we have a very different pict-

[1] Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

ure; the pulse is rapid, averaging 120 or more long before the patient reaches a critical stage of the disease. In typhoid fever the pulse may temporarily be 120, but it never remains for several days at this point unless the patient is severely sick, whereas in general tuberculosis we find great rapidity of the pulse for days, and even weeks, in a patient presenting no signs of immediate dissolution, often very comfortable and anxious to be up and about the room. The rapidity of the pulse in general tuberculosis is of much value, as in both diseases the course of the temperature may be similar; in both diseases there is an absence of leucocytosis, and often the general condition of the patient may leave us much in doubt, though in the one hebetude is usually much more marked than in the other. Of course, the Widal reaction in the one case, and tubercle bacilli in the other, may if present give us an absolute diagnosis.

In cerebro-spinal and tubercular meningitis the pulse may be almost pathognomonic; in the early stages, during the time that the vagus is stimulated by a moderate degree of irritation, the pulse is slow, or rather, what is the important point in diagnosis, is slow in proportion to the general condition of the patient. To take a case we have before us, a patient who for a day or so has had a moderate fever, who is evidently very sick, with perhaps vomiting and severe headaches; yet we find a pulse of 70 to 90. If the case were typhoid fever the pulse would be more rapid; the slow pulse in the case under consideration is, however, slow, because of the direct action of the products of inflammation on the vagus. Therefore, the pulse is no criterion of the general condition of the patient. If there is added to the slow rate an occasional intermittency, we have a still greater assurance that the pulse is dependent upon some direct pathological lesion, and can by no means be considered as an index that our patient is not seriously ill, as is suggested by his general condition.

It is not an invariable rule that the pulse is slow in the early stages of meningeal trouble, but if not continuously slow we find that the rate varies much without any corresponding change in the condition of the patient and independently of the degree of the fever. I would cite two cases seen in consultation, illustrative of the value of the pulse in meningitis. Several years ago I saw in consultation a young child who had been sick several days, was somewhat stupid, had vomited, had fever, and seemed to be very sick: the pulse was 100, and intermitted occasionally. I suggested tubercular meningitis as the most probable diagnosis, chiefly perhaps on account of the pulse, a symptom that the attending physician had looked upon rather as his mainstay in hoping for a favorable issue of the case. My diagnosis was correct. On the other hand, I saw this winter a case where cerebro-spinal meningitis was certainly a possible diagnosis, and yet a rapid, regular pulse made me very doubtful as to the correctness of the diagnosis, and complete recovery in a few days convinced me of the truth of my impressions.

The slow pulse is only seen in the early stages of meningitis, as later in the course of the disease, when the vagus has been paralyzed by pressure or by disease of the nerve itself, we find an extremely rapid pulse, as the inhibitory action of the nerve has been destroyed; to use a metaphor, the engine runs with the throttle wide open.

In cerebral hemorrhage the pulse may again be of great value, when definite symptoms are wanting, as paralysis and allied phenomena; that is to say, in cases brought to a hospital in a comatose or semi-comatose condition, cases so aptly described by Mr. Ernest Hart as "drunk or dying." In alcoholism the pulse is rapid, in cerebral hemorrhage, slow; and hereby, as in a case I wish to cite, we may make our diagnosis. During my last service a man was brought into my ward by the police: he was unconscious, was tossing about the bed, was flushed. The only history obtainable was that two days previously he was found in a doorway, taken to the station house, where the diagnosis of intoxication was made, then was removed to the city prison, whence he came to the hospital. Careful physical examination showed no fracture of the skull, no evidence of external trauma; strong stimulation of the orbital nerve at its exit gave evidence of a slight left facial paralysis and the left side was moved less vigorously than the right side; the neck was a little stiff. Leucocytes 12,800; lumbar puncture negative; temperature 99°. His pulse was 40, a factor that to my mind rendered simple alcoholism impossible. The evidence of paralysis was slight and not easy to obtain, the pulse was evident. The man died the day he entered, and autopsy showed fracture of the skull and extensive laceration of the brain, with subdural hemorrhage. In view of the diagnosis that I made, I was criticised because I had not suggested trephining; I considered the matter and decided against it because the severe general symptoms without marked paralysis made it evident to me that the man was suffering from extensive cerebral trouble, rather than from total destruction of a limited area, which might be amenable to operative procedure.

Dr. Bowditch has recently called attention to the value of a rapid pulse in the diagnosis of early tubercular trouble. On the other hand, an extremely rapid pulse without evidence of serious disease may be suggestive of exophthalmic goitre, as in a case described to me in which later goitre developed.

In many other diseases the pulse may assist us in forming our diagnosis, as for instance in the early diagnosis of acute follicular tonsillitis and diphtheria, the one usually associated with high fever and rapid pulse; the other in the beginning often giving rise to only slight fever, while the pulse may not be markedly quickened unless toxemia has already taken a severe hold upon the patient.

I have spoken of the value of the pulse in the diagnosis of typhoid fever, but in prognosis we have in the pulse what I believe to be an infallible guide. In uncomplicated cases the rate of the pulse is slow relatively to the degree of the fever and the general condition of the patient. When the pulse is continuously rapid, the prognosis becomes proportionately grave with the increase in the rate, though no other alarming symptoms arise to render us doubtful as to the outcome of the case. Leaving out of consideration hemorrhage and perforation, a rapid pulse is an index that the patient is in danger of succumbing to the specific toxemia produced by the disease. The pulse is to us an index of the effect upon the individual patient of the poison of the typhoid, and is of far greater value than any other one symptom or any group of signs or symptoms.

In my early student days I read an article, I think by Dr. Wilson of Philadelphia, stating that in typhoid fever the danger line was reached when the pulse reg-

istered 120; and all cases that I have seen since that day have only confirmed in my mind the great dependence to be placed upon this axiom. I have seen patients die who had only a rapid pulse as indicative of danger, while again and again I have seen patients recover where the pulse ran from 110 to 120, yet they were very stupid, had involuntary passage of urine and feces and perhaps frequent vomiting. I am so sure of my ground in this matter that in the individual case I dare to make a favorable prognosis if the pulse is slow, no matter how unfavorable the other symptoms may be. On the other hand, a rapid pulse, independent of any complication, as hemorrhage or pneumonia, causes me great anxiety.

After careful consideration of this matter in a considerable number of cases, I feel convinced that the danger line is reached when the pulse becomes 120. Of course many cases recover when the pulse is rapid, but not without a severe struggle for life.

The remarks which I make as to the prognosis in typhoid do not refer to cases complicated by intermittent diseases or by perforation and hemorrhage. In such instances the value of the pulse lies rather in diagnosis than in prognosis.

A sudden rise of the pulse without apparent cause suggests hemorrhage, especially if accompanied by a fall in the temperature. In this connection we must remember that the fever may fall by crisis, but in such instances with the fall of temperature comes a corresponding fall in the pulse, and the general condition of the patient is decidedly favorable.

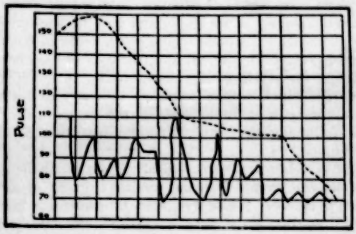
In perforation the pulse is of the greatest value, as in the following case. Last summer, at the time of my visit, one of my patients was perfectly comfortable with a pulse of 80: at half-past one my house physician, Dr. Stevens, telephoned to me that the man had a pulse rising rapidly, had pain in the right side of the abdomen, an access of fever, with an expression of anxiety. Examination showed no blood in the bowel, the pulse was 120, there was a leucocytosis of 15,000, and there was rigidity of the right side of the abdomen. The surgeon who saw him in consultation agreed with me in the diagnosis and found a perforation when he operated at four o'clock. In this case the leucocytosis was of great value, as I have never seen leucocytosis in an uncomplicated case of typhoid fever. Hemorrhage was ruled out by the rise in temperature, and the absence of blood by rectal examination.

The pulse may be rapid in typhoid fever in other complications, as otitis media and phlebitis, without rendering the prognosis unfavorable; whereas in acute inflammation of the parotid the prognosis is grave, more so, I think, than when pneumonia or pleurisy is the complicating pathological factor.

In convalescence the pulse is often rapid, and then of no serious import; it is the rule that a patient will pass through a severe typhoid with a pulse not more than 110, and when he first begins to get about have a pulse of 120 or much higher, without the slightest indication that we have any serious danger to combat. Further, many slight troubles in convalescence, as constipation, excess in diet, fatigue from seeing friends, cause a sharp rise in the pulse.

I have once seen a slow but very poor pulse in typhoid in a man that was seriously sick; examination of the heart showed that the pulse was not a sufficient index of the action of the heart, in that many beats were so feeble and inefficient that the wave was not transmitted to the wrist.

In the first volume of the medical and surgical reports of the Boston City Hospital is a valuable article upon typhoid fever, by Dr. Upham. He speaks of the prognostic value of the pulse and states that in 65 cases that recovered the average highest pulse was 108,



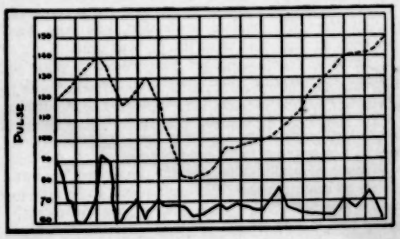
Case I. Parietal disease of the heart. Dotted line shows the apex beat.

while in 14 fatal cases the average highest pulse was 140.

I have looked over a large number of charts of typhoid fever cases in the Boston City Hospital, and found the same relative proportion of deaths to the pulse-rate.

Finally I wish to quote from Dr. C. Ellery Stedman's valuable essay on typhoid fever, published in the third series of the City Hospital reports. In this essay Dr. Stedman says, "Temperature for diagnosis is invaluable. For guidance during the disease I rely on the pulse." "I have seen no patient die whose pulse has not reached 120, twenty-four or more hours before death," and finally, "In these ten years the pulse has given the warning of approaching trouble even when the temperature has signified nothing untoward."

I wish to call attention to one very marked sign of cardiac weakness that so far as I know is not mentioned by most writers. Dr. Whittier has referred to it in a short article in the *Boston Medical and Surgical Journal*. Namely, a discrepancy between the rate



Case II. Dilatation of heart, probably parietal disease. Pulmonary infarction. Death. Dotted lines show the apex beat.

of the heart beat and the pulse as felt at the wrist: in many cases it is difficult to count the pulse because of its irregularity or the constantly changing rhythm, though we are conscious that a feeble pulse is occasionally felt beneath the finger, but in the cases under consideration no pulse wave is felt. This condition may be said to represent the acme of cardiac weakness and may be

responsible for some of the cases in which a slow pulse is reported in fatty degeneration of the heart. This discrepancy between the rate of the pulse and the apex beat I have seen frequently in great dilatation of the heart, dependent upon disease of the myocardium, much less often in valvular disease of the heart. I have noticed the same phenomenon in acute degeneration of the heart as seen in infectious diseases, notably in typhoid fever and in diphtheria. In diphtheria it may be seen during the acute stage, and also in the serious cases of cardiac weakness which appear late in convalescence, perhaps dependent upon diseases of the nerves regulating the action of the heart, similar to the specific neuritis which causes paralysis of the muscles of the nasopharynx or the muscles of the extremities.

The following cases give a good illustration of the phenomenon:

CASE I. Man, forty-five years. Great alcoholic excess: short of breath for six months; great general edema; cyanotic. Pulse irregular, intermittent; heart dilated; at the apex was a systolic murmur. He gradually recovered and was discharged in a month. On entrance the apex beat was 160, while the pulse was 110. For ten days the apex was much more rapid than the pulse, while later in convalescence they coincided. (See Chart I.)

CASE II. Man, forty-five. No alcoholic excess; no rheumatism. Arteries sclerotic. Heart much dilated. Great improvement at first in hospital. Then many attacks of pulmonary infarction; acute and rapid dilation of the heart, great edema and death. (See Chart II.)

These two charts are illustrative of the condition of great weakness of the heart in which a large proportion of the beats are so feeble that no wave is transmitted to the wrist.

PHILOSOPHY OF SICKNESS.[1]

BY THOMAS F. HARRINGTON, M.D., LOWELL, MASS.

IT is not my privilege to present any new addition to the long list of recent discoveries and wonderful progress with which the present medical age abounds, but rather to claim recognition for an old friend, a very old one, who, during some of the ages at least, received attention from the medical profession, but who has never been so neglected as at the present time.

In order to reach a proper conclusion, it will be necessary to consider some questions, which at first sight may seem irrelevant, but which may have more or less bearing in sustaining recognized phenomena.

During all ages there has been that mystery in the minds of the laity surrounding sickness which neither the advance of civilization nor the improved modern methods of scientific enlightenment seems to be able to dispel. We find that at the end of the nineteenth century people censure the physician on the death of his patient with as much rancor as was done in the earlier and savage ages; not because the physician was unable to save the patient from death, but because he did not have knowledge of the power to cure the disease. Is it not just and proper, therefore, that we members of a profession to whom such power is ascribed, and who not unfrequently encourage such a belief by our private conversation, acts and publications, should try either to earn to the best of our ability the compliment implied, or else stand before the world in our true light, stripped of all false coloring and chicanery.

That medical science and art has made wonderful advances tending to the alleviation of human sufferings and to the prolongation of life is admitted by all; that many diseases are yet beyond the reach of human skill must also be admitted; but that there is in every sickness a quality of body or mind, or both, which is capable of recognition and influence from without seems to have escaped observation. Many physicians, it is true, in all ages of mankind, have felt its power in the treatment of sickness, but they have either ascribed the result to some agent employed, that is, a cure, or to the ingenious philosophy of homeopathy, as lately formulated by Dr. Charles S. Mack, and reported that the patient "recovered."

I have not the time at this opportunity to introduce any of the various theories of metaphysics, concerning which men most eminent in sciences have differed. It would be presumptuous for me to even select one of the many advanced. It will be sufficient to choose certain admitted dogmas from many of them in so far as they have, in my judgment, any bearing on the philosophy of sickness. Ancient and modern philosophers and scientists have ever struggled with the one factor which concerns us in the consideration of this subject, namely, personality. Many theories have been promulgated, schools founded and creeds erected at various times throughout many ages. It does not concern us much, as physicians, whether empiricism or transcendentalism, idealism or materialism is the accepted philosophy of to-day; whether we believe in Darwin, Spencer or Pasteur; whether one part of the brain or another is concerned in our mental acts; whether we compare our physical movements to a message over telegraph wires or whether the brain is the seat of the soul; all these are questions of indifference to the physician in the appreciation of individuality; the one truth shines forth, that man possesses an identity, which is neither wholly physical nor wholly psychical, but which is both, often acting through the ethical life and often independent of it — physical because it has a bearing on results which we associate with others; psychical because it is limited to the one being which, as Lotze says, is capable of being affected and producing effects. Thus there is in every person a dual person which is susceptible to change like its physical self, but which cannot be separated either in whole or in part from the living physical body — a being which, while in itself cannot be explained nor influenced in the sense that physical bodies are, yet can be explained and influenced indirectly, that is, by connecting it with the physical self, a sort of parallelism between the two (Münsterberg). That this individuality has not been capable of exact localization and description is no argument that it does not exist, for if such a position were true, what would become of many of the sciences or departments of knowledge? Even truth itself is not always possible of demonstration.

Nature is constantly giving us proof that things are different than they seem; she demonstrates that while the earth under our feet is at rest and immovable, yet it is in motion more rapid than particles of dust in the fiercest whirlwind; we believe that sound and color are such, yet we cannot explain why, unless we fall

[1] Presented to Section on Practice of Medicine at American Medical Association Meeting at Columbus, Ohio, June 6-9, 1899.

back on our senses, and that is just where we find the proof of the individuality in our fellow-men. We cannot perceive this quality in man as readily as we can the qualities of physical science, yet it must not only be perceived, but appreciated, if we are to do full justice to our patients. As man is superior to animal in appreciation, so there may be a difference among men as to the quality and quantity of appreciative power each possesses; that all mankind has the power of appreciation is too well proven to need argument. We are accustomed to argue causes from the effects; so in like manner are we able to conclude from the products as to the power which acted; these products in man are individuality. If we do not recognize the individual in sickness, but rather view sickness in reference to those causes or conditions we know of (that is, pathological or others), we are apt to ascribe certain conditions to these causes rather than ascribe them to unknown causes; hence error, and according to the degree of our ability to describe or the activity of our intellect, we sustain or formulate new theories, diagnoses and diseases, all resting on the same unsteady foundations, which must necessarily fall, as no hypothesis which is not founded on truth can prevail.

It would be as reasonable to deny that man possesses the power of speech at birth, because he did not exercise it then, or that man has will or consciousness, because an anatomical description is wanting, as it would to assert that man does not possess personality. When we see a frail, emaciated child withstand an attack of disease of a uniform type which proves fatal to another child with every condition as near similar as it is possible for two sicknesses to be; when we see poorly-nourished, hard-working women pass through a difficult labor, while others, with every advantage which wealth can procure, succumb to normal labor; when a man over ninety years of age, whose mental faculties have been most energetically applied, submits to a serious surgical operation without an anesthetic; when celebrated army surgeons ascribe nostalgia as a cause of death among volunteers in the army, then indeed must we recognize some influence other than mere physical traits in the human system.

The present tendency to explain the phenomena through the nervous system is, in the majority of cases, a makeshift which is as uncomplimentary as it is unscientific. Stamina, vital force, faith, idiosyncrasy have all been offered to explain the results, and while it may be impossible to fit a term which will meet all objectors, the one fact remains, that there is *something* present. Again we see this self, this personality, exhibited in another form; for example, self-discipline, sagacity of mind, decision, honesty of character, all of which require more than a mere physical or psychical origin for the phenomena manifested. It implies a plurality in the individual, one and the many. If we believe in the present accepted theory that disease, exclusive of mechanical and traumatic disease, is due to a sort of auto-intoxication arising from changes in materials normally present in the body, and not due to any new material from without the body, and that this alteration (disease) is subject to the same laws, in a degree, which regulate the organism in health, is it asking too much to admit that those qualities of mind and body and soul which we recognize and admire in men in health may also change in sickness and become different in every essential, and as they are often the ruling forces in health, so, too, they may become such in disease; in fact, they may be one factor in sickness requiring treatment.

Bouchard says that "man's urine contains daily enough poisonous matter to cause the death of the person, if it were not excreted." The importance of attention to the condition of the intestinal canal in nearly all the general diseases is well recognized.

In health man is constantly changing in his composition, never the same at any two moments of time; this is likewise true of disease. Disease cannot be looked upon as a fixed science, for while many of the phenomena in disease are fixed and positive, yet when viewed in the totality many constituents are wanting. No two individuals see disease with the same image, yet this does not exclude a classification of disease, nor the recognition of types. The picture, that is, the diagnosis of disease, is never viewed with reference to one particular organ change, to the exclusion of all other organs and changes, but our conclusions are based on the whole picture before us; in other words, the patient. Now, if this be true in regard to the physical being, why should it not be true of the inner self?

A celebrated artist credits his great success to the fact that he never paints a picture until he learns the traits and character of his subject, and during the sittings he talks to the subject on those topics which have a personal interest to him (the subject); in this way he produced a picture which was much praised for its naturalness; it reflected the true inner self as well as the exterior physical features.

What is the very thing which makes one physician more successful than another in the care of patients? The family say it is "faith" or "confidence," while we often think it is our superior knowledge. The truth is, that the successful physician is he who perceives and appreciates the whole patient, and uses the knowledge gained with the proper judgment, the physician who treats the patient as well as the disease.

The stimulus given the patient by his belief that his physician possesses an extraordinary power or insight is often sufficient to awaken the potentiality in the inner patient which shows itself in the physical self.

When we view the past history of medicine with its false notions, superstitions and beliefs, with its crude methods of research and investigation, and compare the teachings and doctrines of Hippocrates with those of our age, with all the advantages which we possess, it must with truth be admitted, that in many respects, the advance has been very little, either to the profession as such, or to the science of medicine. Much of the confusion in the diagnosis and treatment, as well as in prognosis, which prevails today has been brought about by neglecting to look deeper than the physical aspect of the case presented. The overdrugging treatment of patients, which is now happily giving way to rest, dietetics, and conservation of patients' strength, was due more to physicians giving their thought and energies to the disease and thereby neglecting the patient, than to any particular demand for poly-pharmacy. We find the cause of this chiefly in (1) improper medical teaching; (2) specialism.

If we take any of the medical colleges of the day and examine the courses offered to the students, it is evident at once that there is yet much room for improvement in the system employed. The advanced step taken at Harvard and others in the standard re-

quired, both in entering and in graduating, augers well. Yet, to claim that no man who is not a college graduate can become a successful and creditable member to the medical profession, is carrying the analogy to an absurdity; there are too many living proofs to the contrary.

While the present system of "electives" prevails at the colleges it is possible for a boy to graduate in arts, and yet not select, during his whole course, even an inhibitory study to his medical course. True, he is able to anticipate some of the first-year medical studies, but that is merely for time-saving purposes. I believe in the elective system as the one calculated to give the greatest good to the greatest number; the defect is not so much with the system as with its application. A university, to have any right to such a title, must teach universal knowledge; anything less is not truth, and to whatsoever the pre-medical training of the man is deficient, just to that degree will his usefulness as a physician be impaired. It is not the addition of new studies that is required, but rather the awakening of the student's mind to the proper appreciation of the courses now offered. The great importance of physiology, anatomy, pathology and histology in the study of the human system (physical) is an axiom of medicine; the advantages of laboratory researches in neurology and brain diseases are more apparent every day, enabling us to trace many phenomena to almost a certain origin, but it is to the teaching of clinical medicine with its auxiliary, theory and practice, that we may, with profit, look. I take the system used at Harvard because I think it to be the highest type, as well as being my Alma Mater. After witnessing and performing the most conclusive experiments on animals, after learning thoroughly the etiology and symptoms, as laid down in all the text-books, the student sees patients by the hundreds at the clinics and hospitals, with every opportunity to become familiar with disease in all its details; he hears the patient's history, past, present and future; inspects, auscultates and percusses the patient to his heart's content; demonstrates to his teacher and fellow-students the objective and subjective signs of the disease; a most elaborate system of diagnosis by elimination is gone through and the patient is passed on to make way for the next patient. After months and years of this routine, he passes his examination and receives his reward — *Medicinæ Doctor*. Now what are the results of this training? While there may be no question but that the experiments performed upon animals in the laboratories are true, scientifically, and also, that they have been a great blessing to humanity, on account of the knowledge gained, yet the physician who looks upon his patient in accordance with the conclusions drawn from such experiments, to the exclusion of all other knowledge, sees a being who is born, grows, eats, drinks, walks, reproduces his kind, and dies; he compares his organs, his structures, his functions, his faculties to those of the animal, and practises medicine accordingly (Newman). Such a man would not be taken as the type of the true physician, yet one has to but read some of the medical journals of to-day to see that it is not always the graduates of unrecognized schools who often give current to such views. The student does not see the man, but rather the disease; he views him wholly in his relationship to those known causes with which he is familiar, and neglects to see him in his higher, truer self. He has, perhaps, seldom seen his patient more than once, and has never had a patient from the beginning to the end of an illness. The student should be taught that there are no fixed rules applicable to all patients, even in the so-called type of the disease; that each patient is different, in a degree, from any other patient ever seen; that hereditary, environment, sex, age, climate, occupation, etc., all have their bearing on the patient in certain particulars, but that they are not the only factors; teach him to look for the true patient, the individual, and while it may not be as easily discerned nor demonstrated as physical factors, yet it nevertheless exists in every person. If we neglect to appreciate this quality in our patients, our knowledge of their condition and our usefulness as physicians are limited to just that degree. Teach the student the faculty of looking for the self in every patient and of forming some estimate of its influence, for even if the conclusions be faulty, yet they are better than none, and in time such a habit will bring its reward.

One of the surest ways of learning the real patient is for the student to become, metaphorically, the patient. Although it cannot be expected that every physician should be a scientist, so to speak, yet, the cultivation of the practice of looking at his patients in the manner implied above must make him more systematic in his observations and enable him to place phenomena in their proper position to known facts. The microscope does not dispense with eyes; the lecture-room and text-books will help him, but he must be true to himself, he must be a party in the work. It will develop that quality which is most necessary to the physician, that is, judgment; not the faculty of avoiding mistakes, but rather that which enables him to seize the strong points in the case before him.

Have the student study his patient and the disease thoroughly, then come before the class and submit himself to a method of questioning and cross-examination from the professor, the student acting the part of the patient in the subjective sense, supplying the necessary objective information to make an intelligible picture; after which the students make their diagnosis to the professor. Such a method would give the young physician more practical knowledge and greater confidence in meeting his patients in private practice.

Until medical schools have their own hospitals, with all the advantages that that implies, it will be necessary to go on more or less in the same routine as at present; but the needs of a school-hospital could be somewhat minimized if the system now used (Harvard) in the obstetrical department, of giving the students private cases in patients' homes, with consultations (demonstrations) under one of the teachers, was extended to clinical medicine; disease can be demonstrated and studied in schools and hospitals, but sickness can be best studied and appreciated in the homes. Every physician is familiar with the self-confidence manifested at our first confinement cases in private practice, and the almost entire lack of confidence we experience on our first medical cases. Nothing could be a stronger argument in favor of benefits of the home-patients method of treatment.

Much has been written on the injurious effects specialism is having on the practice of medicine. While there is no doubt but that society and science is benefited by splitting medicine up into various parts, and while it is, perhaps, true that such subdivisions are necessary, yet the physician who gives himself

wholly to this practice must of necessity go backwards, and we see him carrying his views into cases in which they are not applicable; the result then becomes detrimental to science and society. The tendency of young graduates to rush into specialism, without any experience in general practice, should be condemned by all who hope to see the medical practice reach the high plane for which it was destined. Zamolxis puts it well when he said that "As you ought not to attempt to cure the body without the head, or the head without the body, so neither ought you to attempt to cure the body without the soul, and this is the reason why the cure of many diseases is unknown to physicians of Hellas, because they are ignorant of the whole, which ought to be studied also, for the part cannot be well unless the whole is well" (Allbutt). The overcrowded condition of the medical profession; the age at which men graduate in medicine; the belief that the road to fame and wealth is more direct and shorter in specialism; the microscopic tendency in the question of diagnoses; and the association of the general practitioner with "old-fashioned ideas" in the minds of the new physician, are some of the causes tending to modernize the practice of medicine. That a reaction has already set in is evident from the public addresses of those competent to speak, also from the position taken by our leading colleges on the question of higher medical education, making a university of medicine of what was formerly a school. Then, again, the marked progress in the general educational standard of society of to-day, and what that promises for the future, are almost conclusive that the time is not far distant when more will be demanded of the physician than that he be a part and not the whole, that he combine those traditional qualities of the old physician, reinforced by modern discoveries, with a systematic knowledge of all those sciences necessary to complete the whole, perhaps less in amount in special lines than is now held by some, yet sufficient. The physician of the whole body and mind, who from his knowledge of nature and man and soul is the only one entitled to that name — Physician.

IMPROVEMENTS IN ARMY MEDICAL SERVICE, SUGGESTED BY EXPERIENCE IN THE LATE WAR.[1]

BY WILLIAM H. DEVINE, M.D., SOUTH BOSTON,
Lieutenant-Colonel and Medical Director, Second Brigade, M. V. M.; Late Major and Brigade Surgeon, U. S. V.

THE object of this paper is not to criticize the medical service of the regular army or National Guard, especially of our own State, whose medical service at the commencement of hostilities was almost all that could be desired, considering that the volunteer militia had not seen active service for over thirty-five years. It is only by experience that we can approach perfection in any branch, and my idea is to suggest methods for improvement in our service.

As surgeon in charge of a large field hospital, I have had exceptional opportunities to observe defects in our present system. No matter what advancements are made in National Guard medical service, one cannot fully utilize them in national as in State service, for the reason that in the former we are depending on the efficiency of superiors over whom we have no control; but the State training of its medical officers in a body and the individual training cannot fail to produce good results. To illustrate this point: The country has another war; Massachusetts sends to the front, as it recently did, medical officers well trained in the duties of their department; each regiment, as in this war, is sent to a brigade composed of troops from different States, whose medical department may be controlled by an officer of little experience in caring for large bodies of troops. Necessarily, the inefficiency of the head of the department must hamper the work of our medical officers; for instance, take the matter of supplies; if the superior officer does not furnish the proper medical supplies, the command must suffer; but with subordinates who thoroughly understand red-tape the career of the inefficient will be anything but pleasant. Then again the surgeon is apt to be detailed from his organization for special duty, but wherever he goes his individual training will help him.

What excuse have I to offer for bringing this subject before our Society? I have no apology to make; it is the proper place. Our profession is responsible to a certain extent for the men it sends to the medical department. For the work of our physicians on the field, the profession at large share with the military authorities the criticism which may be just or unjust, and it seems to me highly proper to interest the profession in the matter. The material, medical, surgical and hygienic, procured in war should be placed in the hands of the best professional talent, in order to reap what profit there is to science and for the benefit of mankind. For the information of those not familiar with military organization, I will state that medical officers in an army corps (containing about 25,000 men) were distributed about as follows: one chief surgeon of corps, with the rank of lieutenant-colonel; two division surgeons, with rank of major; six brigade surgeons, with rank of major, one for each brigade; nine regimental surgeons, with rank of major, one for each regiment; eighteen assistant surgeons, with rank of first lieutenant, two for each regiment; one assistant was detailed for special work at division hospital, or other duties.

So many details were made from medical officers for special duty that most organizations were handicapped by being short of physicians. Brigade surgeons existed only in name. They were detailed to take charge of division hospitals and other special duty. The senior regimental surgeon was acting brigade surgeon. Contract surgeons were detailed to take the place of these officers in many cases. Many of these contract surgeons were first-class men, impelled to offer their services through patriotic motives, and I shall always recall with pleasure the able and self-sacrificing devotion of many to their duty. These men were not examined for their positions, and, consequently, some got into the service who had nothing to recommend them but their political influence. For obvious reasons every surgeon ought to be commissioned in the service, not for any vain glory, but in order to render all amenable to the same discipline, and to stimulate pride. I cannot see the reason why men should serve in this department without commissions any more than in any other. A reserve staff could be formed of physicians who came with good professional recommendation and passed an examination in the different branches of the science. If I can judge by the eagerness of my medical neighbors to go to the front, I think the flower of

[1] Read before the Massachusetts Medical Society, June 14, 1899, and recommended for publication by the Society.

the younger members of the profession could be secured for this honorable and important work. When a medical officer was detailed for special work, as, for instance, where one considered an expert in yellow fever was hurried to the front, a member of this reserve staff who had shown his qualifications for the work should be detailed to take his place. He could assume his new duties feeling that he would be respected by officers and men, holding the commission which entitled him to it. Of course, it is only fair to mention that the apparent urgency was so great and the heads of departments so busy that to make provision for this method was perhaps not deemed expedient.

Had our troops in this Commonwealth gone to the front in brigades which had long been organized, their service would have been even more efficient than it was, with medical and every other department properly equipped and an ambulance corps that has been a pride to our soldiers. Our leaders in other departments of the militia service as well as the medical are, and always were, men of ability and action. As intimated in an early part of this paper, surgeons in their respective States may have received excellent training, but in the field may be handicapped by an officer whose experience has been confined to a small military post; much of the executive ability of the former is lost by this, but even under these circumstances their training renders their services valuable, although not so much so as if they performed duty with their own organizations.

You are familiar with the noble work of the Massachusetts Volunteer Aid Association. The surgeon superintendent of their ship *Bay State* was formerly Surgeon-General of this State, and his successful management suggests the feasibility of calling to our aid in emergencies the services of physicians who have served the State in its medical department, but who have retired after nine years of continuous service, or another class that have severed its connection with the militia for various reasons. In looking over the adjutant-general's reports of this State for the past ten years, I find the names of at least twenty surgeons who have left the service. Most of them would be proud to give their services if asked, and I can answer personally for several, who have told me that they would have served if they could have procured an appointment.

I recommend that in the future, a reserve staff be formed of all medical officers who have served in the militia. These men have received some training in the duties of the medical department and if not required in the active work of a campaign, their advice and relief work at home would be of great value. The skeleton of a first-class Volunteer Aid Association could be formed by these officers, controlled by the surgeon-general, and its official connection with the service would be of decided advantage. A military organization should be able to take care of itself in every department.

At least one surgeon in each brigade, and better if in each regiment, should be selected for his skill in surgery. You can see the importance of having a trained surgeon, a specialist in surgery, in an organization that may be engaged in battle where major operations requiring great skill may be performed. The camp of instruction is not the place to teach surgery, neither is the battlefield the place to learn. In the school suggested men will be taught surgery, particularly that which relates to gunshot wounds and other injuries likely to be met with on the battlefield, but this instruction cannot make them skilled surgeons; a special aptitude is required, and we should have no difficulty in getting at least one first-class surgeon in every organization. A special surgical examination on admission could be given to applicants seeking those positions.

A bacteriologist could be attached to each brigade or division. The reserve corps before alluded to could furnish specialists in this line. With thoroughly equipped laboratories, they could be of inestimable value in aiding the surgeons to diagnose doubtful cases of malaria and other diseases, besides furnishing valuable aid in compiling the medical history of an army, and adding to science. A division hospital, as its name indicates, is a hospital for all the sick soldiers of the division, that is, for those ill enough to be confined to bed. In this campaign regimental hospitals were practically abolished and all the hospital equipments called in at least in one Southern camp to form the division hospital. This met with such vigorous and just opposition from the volunteer surgeons that a compromise was made and each regiment allowed to retain two cots in its hospital for emergency and observation cases. Towards the middle of September the wisdom of allowing regimental hospitals was clearly seen and provision made for the care of soldiers in their own regiments. I think most volunteer surgeons will bear me out in the statement that division hospitals are failures in the broad sense. There should be a division hospital for special cases, where major operations could be performed and where cases requiring treatment of a specialist could be referred; also a contagious hospital. The regimental surgeons should treat their own men; their sick should be nursed by their own comrades; the question of discharge for disability and sick furlough should be settled by the regimental surgeon. The surgeon would not only be responsible to his superiors for the care of his sick, but he would also be responsible to his State and his neighbors. With division hospitals the regimental surgeon has but little responsibility; he becomes a mere transferring agent for division hospitals; an admitting physician, so to speak; his men lose confidence in him. In the future, if division hospitals exist, they should be thoroughly equipped with everything necessary to form a first-class field hospital, and not depend upon the equipments of the State to furnish them. I do not wish these remarks in regard to division hospitals to be considered a reflection on any individual for their introduction in this campaign, for it did seem before and early in the war that the system had much to recommend it; but I base my opinion on my own observations and those of many surgeons. However, a longer trial of these institutions may convince us of their superiority. The failure to supply these hospitals with suitable equipment is explained by the fact that the demand for medical and hospital supplies for such a large army was so great that it was impossible to furnish them at such short notice.

In the National Guard we have not the organization for a division hospital, but it would be well to practise more for the perfection of brigade hospitals, which really are division hospitals on a small scale, in order to perfect ourselves in the working of larger

field hospitals. We had so little sickness during our short encampment in this State that we had but few cases for our brigade hospital at South Framingham.

The encampment, care of men, etc., should be the same as in actual war; the drinking water *should be filtered, no matter how pure*, in order to accustom the men to it, and to impress on their minds the importance of such a procedure. A garbage plant is important; a regiment should be so accustomed to active service methods that it could step gracefully from the militia into the national service. To be sure, there would be more or less recruits in every organization at the commencement of hostilities, but the skeleton of the perfect machine would be there and would quickly adapt itself to campaign work. The soldier cannot be produced in a month any more than the mechanic.

How much have we improved our medical department since the Civil War? And in what ways shall we improve it in the future? As far as the volunteer service is concerned, we have made a decided advance. Much interest has been taken of late years in the progress of this work. Education of medical officers coincident with general medical education has contributed not a little. Antisepsis has contributed greatly, but of course we cannot claim all improvements, such as antisepsis, for the medical department; but we can claim it for our profession, and after all, what we claim for our department is simply a claim for our profession, for there is no title we are so proud of as plain doctor.

In 1892, the Association of Military Surgeons of the National Guard was formed, and in 1894 the scope of the organization was enlarged by taking in the medical officers of the United States Army, Navy and Marine-Hospital Corps, and the name changed to Association of Military Surgeons of the United States. This Association meets annually, and many valuable papers on all subjects pertaining to military medicine are read and discussed. The convention lasts three days, and the exchange of ideas and the interest awakened in subjects have done much to advance the medical service of the country.

I do not wish to take all the credit for suggestions here made. Some are original, and many are obtained from my associates in the militia, particularly the superiors with whom I have had the good fortune to serve.

A few quotations from the surgeon-general's reports will show the interest taken in our State medical service. Many of the suggestions have been acted upon and have borne good fruit. I trust that ere another year has passed the volunteer militia will have profited by the introduction of all these improvements.

Surgeon-General Kittredge in 1893 recommended a physicial examination for recruits, that a gymnasium be established in every armory, and a systematic course of athletic exercises be prescribed and carried out under a proper instructor, and also that a system of feeding troops in conformity to military usages be adopted, together with an emergency ration.

Surgeon-General Burrell's Report, 1894: "In a few of the States the medical department of the National Guard has been placed on a permanent footing by being made a staff corps. In one State, when a vacancy occurs in the medical department it is announced in the public press that a competitive examination will be held for such appointment, and the best man is commissioned as an assistant surgeon, and is sure of promotion and full surgeonship, and possibly a directorship. Whether it were wise or not to bring about this condition of affairs in our own State has been a matter of serious consideration; but our present system and the personnel of the medical department of this State are in such condition that it has not seemed wise to me to seek such a change, at least at present." (Some of the duties of medical officers, M. V. M.)

Recommendations by General Burrell, Surgeon-General's Report, 1894: "That a physical examination of recruits be made mandatory; that the surgeons receive compensation for the examination." Dr. Burrell and his successors have worked hard for the attainment of this, and now the examination of recruits is mandatory, and the surgeons will receive moderate compensation for their services. Since the plan was started by Dr. Burrell our recruits have been examined to some extent through the generosity and unselfishness of our medical officers, who have worked zealously for the State without pecuniary reward, but in the future this examination will be done in the thorough and efficient manner such important work deserves, and the surgeons receive some compensation.

In the late war many officers and men enlisted who were indebted to their States for their military training, but being rejected on physical examination, were consequently unable to make any return for this training.

The war has taught the lesson anticipated by General Burrell and his successors, and in the future our militiamen will be ready physically as well as patriotically when their country calls for them.

Surgeon-General Burrell's Report, 1894: "I am convinced, from personal investigation and from reports of our medical officers, especially that submitted by Lieut. C. W. Galloupe, that a large saving in illness, even of a temporary character, might be made at the encampments of State troops by the State providing suitable food. I would by no means recommend an army ration, — not but what an army ration in itself is an excellent bill of fare, but it is not adapted to State troops who go into camp for a short time. Troops should be provided with plain, wholesome food, and this should be furnished by the State."

In 1894 General Burrell adopted a system of blanks modelled after those in use in the army, but so modified as to meet the wants of the State service.

A school for medical officers was started during the régime of Surgeon-General Burrell and is still in existence; one or two sessions have been held every year, and many interesting papers on subjects of military medicine and surgery have been contributed. Dr. Burrell obtained permission from the Surgeon-General of the United States for members of our organization to attend the school for regular army surgeons in Washington, but for obvious reasons advantage was not taken of this privilege. The starting of our school by Dr. Burrell was a step in the right direction, and the continuation of this idea on a larger scale desirable, but the formation of a special school for militia medical officers, and conducted by medical officers, is impracticable, and I would therefore recommend that a professorship of military medicine be established in the different reputable medical colleges of the United States. It seems to me that this would be a great step towards

approaching perfection in military medicine and surgery. The different branches of these subjects, including hygiene, transportation of the sick and injured, the management and organization of field hospitals, red tape of the service, etc., could be taught in a course of lectures extending over one year.

Even though the knowledge thus gained were never used in army service, it would be no burden and would prove useful in civil practice. The knowledge of red tape acquired would give the student an insight into methods which would be of some benefit to him in conducting his ordinary business affairs. When the tocsin of war sounded again it should find the medical profession, as a body, ready to tender its best assistance, without the preliminary training which is now required in order to do effective work.

In the late war our profession as a whole did noble and efficient work, and whatever may have been lacking in its effectiveness was not due to ignorance or incapacity as far as ordinary professional duties were concerned, but to inexperience in military medicine. It has been suggested that the National Government establish a medical school for army surgeons, including militia surgeons, to train physicians for the army. This is unnecessary, as the course now given in Washington to regular army surgeons before they enter their career is sufficient. In any great emergency, such as the Civil War and the one through which we have just passed, volunteer surgeons must be depended upon for their share; they cannot devote the time to take a course at some special school remote from their homes, and the method I advocate would be in conjunction with their regular medical training. The advantages of this system are obvious. The country would then have a large body of doctors fitted for the medical service ready at short notice. Until such a system is inaugurated, in fact well established, there should be a course given to medical officers of the National Guard in medical schools or post-graduate courses, the latter consisting of at least thirty-six exercises in the form of lectures, or one a week for the school year. A school like Harvard could give one or two exercises a week in its regular course, or the State could provide for instruction in post-graduate schools. This system would give an opportunity to medical officers to derive decided benefit from connection with the militia. At present the advantages are not professional but almost purely social, excepting perhaps the slight experience derived from practice at State camps. By strict entrance examinations, embracing general medicine and surgery, the Massachusetts Volunteer Militia has maintained a high standard in its medical department, and it is the hope of the writer to see the whole service of the National Guard brought to the same or even higher degree of efficiency, by suggestions recommended in this paper.

I quote from the late Surgeon-General Forster: "Voluntary examinations of recruits are maintained in some commands; to secure the greatest efficiency of our State troops, such examinations should be mandatory with all, and I so recommend." To establish company bearers as part of the militia system of the State, he requested the following paragraph to be incorporated in general order No 6:

"Company commanders, with the concurrence of the senior medical officer of the command, will designate four privates for instruction as litter bearers. They will be known as 'company bearers' and shall be instructed under the supervision of the medical officer (senior) at least one-half hour daily while in camp and at such other time during the year as the commanding officer may deem advisable, in the duties of litter bearer and the methods of rendering first aid to the sick and wounded. This special instruction will not relieve them from the performance of all regular (their) military duties. They will give first aid to the sick or wounded or carry them to the rear until relieved by members of the ambulance corps or a medical officer. When so relieved they will immediately join their companies.

"When on duty where their services may be required they will wear a distinguishing mark — a red brassard around the left arm, just above the elbow."

Our present surgeon-general has well sustained the record of his predecessors. His earnestness and zeal in seeing that his medical officers were well supplied with everything needed in their department will always be kindly remembered. His motto, "There is nothing too good for Massachusetts soldiers," has been lived up to in the present campaign.

In his recommendations this year Surgeon-general Blood says: "I would recommend that each Massachusetts Regiment of Infantry, M. V. M., have one surgeon with rank of major, and two assistant surgeons with rank of first lieutenant." In case this increase is made, the extra surgeon could be selected for his surgical ability.

"Of the nearly nine thousand troops at one time or another encamped at Framingham during the summer, only one serious case of illness occurred. This seems a remarkable record, in view of the great amount of sickness of the United States Volunteer soldiers in Camps Alger, Va., Thomas, Tenn., and in camps in Florida. This, I believe, can only be accounted for by the supposition that the sanitary conditions were better at Framingham than at the camps mentioned, and that there was a better supply of pure water; this was probably true."[1]

Emergency lectures following the course adopted by the Massachusetts Emergency and Hygiene Association have been given with more or less regularity to the different organizations of the militia the past seven or eight years. The Association has furnished skeleton charts, etc., in fact everything required for a course of instruction in first aid to the sick and injured; it has also furnished diplomas to soldiers who have passed satisfactory examinations and have been recommended by their medical officers. Too much praise cannot be given this noble Society for its good work. Prevention of much suffering and even loss of life amongst Massachusetts militiamen were due to the instruction received in first aid by the militia of the Commonwealth. Dr. Otis H. Marion has done much to advance this work in the militia.

To this course I would add instruction in camp hygiene, the prevention of contagious disease, etc., embracing policing of camp; personal cleanliness; the importance of reporting venereal disease to prevent its spread by drinking vessels and other means; care of water supply to prevent pollution; bathing, clothing, ivy-poisoning, and kindred subjects.

No rules and regulations to prevent disease can be carried out without the intelligent co-operation of officers and enlisted men. An officer high in command in United States Volunteers told me that he saw a

[1] Surgeon-General's Report, 1898.

soldier lying on the ground and drinking from a stream that had been contaminated nearer its source by washing, bathing, etc. There was no need of this individual endangering his health by drinking from the polluted stream; there was an abundant supply of pure water in each regiment. Such reckless individuals form a small part of the volunteer force; the great majority are earnest, patriotic men who are anxious and willing to learn and practise everything which conduces to their physical welfare. For years I have believed in the importance of individual instruction to officers and men. With this end in view I advocated and, with the permission of the Surgeon of the Ninth Massachusetts, gave instructions to officers and men in the above-mentioned subjects. Each day the members of one company were instructed until the twelve companies of the regiment had been educated on these important matters. The fact that disease was more to be feared than bullets was impressed on their minds and with good results. In two months' service in this country there was not a single case of typhoid in this regiment; in fact I don't think it can be justly said that Massachusetts brought any of the typhoid cases to the South.

This Ninth Regiment, according to Lieutenant-Colonel Weaver, the regular army officer who mustered it into the United States service, was an exceptionally fine body of men physically. Every care was taken to prevent disease, but while in Cuba the hardships during the siege of Santiago were so great that it was impossible to carry out measures for the prevention of disease.

Since writing this paper I have seen various quotations in newspapers and medical journals from high medical authorities, advocating the education of line officers in matters pertaining to camp hygiene. I have the satisfaction of knowing that I have not only advocated but have practised it in the late war and with results that have fully demonstrated its importance.

The ration must be improved upon and adapted to the tropics. Expansion means an army in tropical regions, and consequently it will have to adapt itself to the surroundings. This hardly comes within the scope of this paper. No doubt the military experience of our troops in the Philippines, Porto Rico and Cuba has taught this lesson, and in the near future we shall probably see a ration adopted that will fully meet the demands. The United States Army ration as it stands to-day has stood the test of experience for many years in this country, and I believe gave good satisfaction in camps of instruction.

By direction of President McKinley a special order regarding the food supply of the United States Army in the tropics was recently sent to commanding generals at Manila, Havana, Cuba and San Juan, in order to determine what alterations, if any, in the established rations would be conducive to the better health of troops serving in tropical countries. Each of these officers is directed to institute a board of three officers serving respectively in the line, medical and subsistence departments, to examine into the subject of any desired changes in the ration for the troops serving in his command, and to cable the results of such inquiry to the Secretary of War. It is fair to presume that this will result in great improvement in rations for our troops in tropical climates.

For many years this State has maintained a well-organized ambulance corps under the command of an able and efficient officer.

The commencement of hostilities found this Government with no provision made to take this or other like organizations into its service.

To prevent the possibility of again losing the valuable services of such well-trained men, I would suggest that one or two men be detailed from each company of each regiment for instruction in ambulance corps. I would also deem it advisable to consider the value of a corps of trained female nurses in connection with the militia.

Perhaps there is no position in the army more unsatisfactory than the surgeon's; he has no power to command; everything must be done with the approval of his commanding officer; he is censured for the health of the command, when perhaps he has made every effort to do his duty, Certainly this State has a medical service of which it can feel proud. The examinations for admission to the medical department of the Massachusetts Volunteer Militia since 1874 have been very strict, embracing the following subjects: anatomy, physiology, chemistry, materia medica, theory and practice, surgery and hygiene. To this has been added a physical examination. Our staff is composed of men who have been tried and found successful in their chosen profession; they have given to the work the requisite time and study which it demanded. And will you believe that their training has been for naught? That those who have studied and prepared themselves for this emergency have failed? To believe this is to be unreasonable and disloyal to our profession. The volunteer surgeon who was experienced in military medicine before the war, who was earnest in his calling, could not fail to do good work when summoned to active service.

Considering the fact that the present generation of medical officers has seen no active service, that the large volunteer army was raised at such short notice, it is not surprising that there was something lacking at its management.

The total number of deaths reported in our army, including regulars and volunteers, from May 1st, 1898, to April 30th, 1899, is 6 406. Of these 5,438 died of disease, and 968 were killed in battle or died of wounds, injuries or accidents. This statement makes a great impression as to the danger of disease rather than of bullets; but it is only fair to consider that an army of nearly a quarter of a million of men was exposed to disease for twelve months, where only a small portion of this army was exposed to bullets for a few months. However, considering this, it shows that the prevention of disease is a very important consideration in dealing with the health and effectiveness of an army. Had the entire army been engaged in active warfare, of course the percentage of deaths from wounds would have been much greater.

Petty bickerings between regular and volunteer surgeons, trying to shift responsibility from one to the other, only tends to lower both in the eyes of their fellow practitioners and the laity. Let them come together even more closely than formerly. Let them work together for the public good and remember above all things that they are members of the same profession. To say that regular army surgeons are not bright and intelligent physicians as a class is unreasonable. The examination that they pass for admission to the medical corps is sufficient to guarantee

this; to say that volunteers are ignorant and inexperienced is to belittle the whole profession and degrade it in the eyes of the people. They both are lacking in some qualifications to make the best type of medical officers; many of the volunteers are lacking in military medicine, particularly as regards red tape, etc., and the regular in experience in general medicine and surgery. The combination of the regular and volunteer would make the ideal medical officer. If the regular profits by his experience in this war, and the volunteer by his, and they work together harmoniously in the future, the question of good army medical service will be solved. Let us not give way to personal feelings, criticising physicians who have done the best they could under the circumstances, and who have perhaps done better than we could under the same conditions. Let us note our imperfections and try to improve the service for those who succeed us. Contributions furnished by experience will be a great aid to our successors. Exaggerated and sensational accounts of mismanagement do no good.

Some of the important improvements in our State service the past five years are as follow:

(1) Physical examination of recruits; at first voluntary and now made mandatory.

(2) Ration to be used at camp. Something after the pattern of army ration, but modified for adaptation to State service.

(3) School for medical officers. One session annually.

(4) Company bearers; four privates in each company specially trained in emergency and first-aid work.

(5) System of red tape patterned after regular army, but modified for State service.

I have merely touched upon certain suggestions which could well bear elaboration, but time and space forbid.

The following is a brief *résumé* of the suggestions offered to improve the efficiency of the army medical service. Some of them have been practically adopted by the Massachusetts Volunteer Militia, and it is hoped will be adopted by the entire National Guard:

(1) That professorships of military medicine be established in every reputable medical college.

(2) That until such time as professorships are established, the State provide a course on required subjects.

(3) That physical examination of officers and men be made mandatory.

(4) That troops at State encampments conform as nearly as possible to duties required in service on the field.

(5) That every medical officer receive commission. (This pertains to contract surgeons.)

(6) That one or more men in every company be detailed for regular instructions in ambulance corps, to prevent possibility in the future of the country losing the service of men especially trained for this service.

(7) That one medical officer be selected in each regiment or brigade for his surgical ability.

(8) That a corps of trained female nurses be organized in every State.

(9) That divisional hospitals, in the broad sense, be abolished, and that small brigade and divisional hospitals be established for special cases, such as surgical and contagious.

(10) That the volunteers follow, as closely as practicable, the regular army, so that when called into service together the two branches may work in harmony.

(11) In addition to the present instruction in "first aid," a course in prevention of contagious diseases, etc., be given.

(12) That a reserve staff of medical officers be formed in each State; said staff to be composed of ex-members of the medical department of the National Guard.

Clinical Department.

UNUSUAL DIASTOLIC MURMUR, WITH AUTOPSY.

BY RICHARD H. EDES, M.D.,
District Physician, Boston Dispensary,
AND
RICHARD M. PEARCE, M.D.,
Instructor in Pathology, Harvard Medical School.

THE following case seems worthy of record as helping to throw light on the causation and character of aortic murmurs, as well as for the other uncommon pathological conditions present.

The patient was a business man of active life, married, fifty years old, short and rather stout. No alcoholic or venereal history. Sciatica about five years, and a ruptured varicose vein about three years previously, during which sickness his physician said nothing to him or his family about the existence of heart trouble. About a year previously he lost most of his sleep for a few nights on account of pains resembling muscular rheumatism in his right shoulder, arm and forearm, but these practically all disappeared and did not return.

On February 18, 1899, he realized that something serious was the matter with him, having had a very restless and uncomfortable night, and complaining also of a "scraping" in his chest. This he said he had felt for about six months, but had thought to be only bronchitis! Some weeks previously he had had an attack of dyspnea after climbing stairs, but had soon recovered; and again, during the heavy snowstorm on February 13th, he had nearly collapsed between the train and his house, one-quarter mile, and had been feeling rather poorly since, although going actively about. His breathing on the nights of February 17th and 18th, as described by his wife, was Cheyne-Stokes.

A hasty examination gave a loud "scraping" murmur and thrill at the base of the heart, seeming systolic at first, as it was accompanied by a heave in the apex region, although by no definite apex beat which could be felt.

Further study developed the following picture: The apex beat could be felt very feebly at times in the sixth interspace, one inch outside the nipple in the dorsal position, and in the left side position quite distinctly a trifle further out. The heave was diastolic, very marked, and at times a distinct diastolic impulse, alternating with the true apex beat and with the carotid pulse, could be felt in the fourth and fifth interspaces inside the nipple. The heart dulness was enlarged, corresponding to the position of the apex, and the lower sternum was duller than normal. Later the lower sternum became quite flat to percussion and dulness extended about one-half inch to the right.

The liver was slightly enlarged. Two murmurs, a systolic and a diastolic, were heard all over the heart area; the systolic blowing, slight at the apex (where a slight but sharp first sound was heard), very distinct at the base, louder in the first right interspace, and loudest just above the inner end of the clavicle, where it became louder than the diastolic murmur and was accompanied by a systolic thrill and an impulse much more marked than above the left clavicle. There was no especially strong pulsation in the suprasternal notch. The diastolic murmur was heard all over the chest, loudest at the second right interspace, and could be heard without the stethoscope three or four feet away from the patient. It was accompanied by a powerful diastolic thrill felt all over the upper front chest. The character was best described as "scraping," although at times it was almost musical. It never intermitted or very markedly changed in character or intensity. The pulse, averaging about 92, was a fairly marked water-hammer, fairly strong, with an occasional occurrence of *pulsus intercidens*. A sphygmographic tracing showed the same characters, with so sharp a rise as to make any marked degree of stenosis very improbable. There was no marked arteriosclerosis of the brachials, radials or temporals.

The course of the disease was steadily but slowly downward, with a much congested liver, edema of legs, distressing attacks of orthopnea at times, congestion of veins of neck, and gradually rising average rate of pulse. About one month before death, which was on May 21st, the right radial pulse became distinctly weaker than the left and remained so, and about this time a dulness not detected before was made out, involving the upper sternum and a bit of the first interspace to the right. A slight hoarseness on March 11th, lasting about a week, seemed to be of inflammatory origin, as the temperature was slightly elevated on the first day. The Cheyne-Stokes breathing became more frequent but not constant, and the death was one of exhaustion and gradual failure. There was practically no pain at any time.

The autopsy showed the following conditions: There was marked passive congestion of liver, spleen and kidneys; moderate hydroperitoneum, hydrothorax and hydropericardium; arterio-sclerosis was not general. The heart was moderately hypertrophied (415 grammes), with quite an amount of epicardial fat, the left ventricle and left auricle considerably dilated, and the heart muscle showed marked fatty degeneration. The coronary arteries showed no changes, except just at the beginning of the left, where there were one or two yellowish non-calcareous patches; these did not seem of sufficient importance to cause the failure to compensate. The aortic valves were distinctly but not extremely incompetent, the circumference being nearly normal (8.4 centimetres) and the leakage being due to a shortening of the anterior cusp. Just above the junction of the anterior and left posterior cusps was an aneurismal pouch 1.2 by 2 centimetres in diameter and 1.6 centimetres deep, the edges slightly overhanging, containing no thrombi. The orifice of this cavity was in contact with the anterior cusp of the valve, which was somewhat shortened thereby, giving rise to the incompetence just mentioned. At the junction of the anterior and left posterior cusps there was a small area of subendocardial hemorrhage. The bottom of the aneurism was opposite the left auricle, the endocardium of which was thickened at this point over an area three centimetres in diameter. The aorta showed a dilatation of the arch and descending portions. This dilatation was most marked in the ascending and transverse portions of the arch and gradually diminished to a point opposite the second intercostal arteries. At a point four centimetres above the aortic valves the circumference of the aorta was 13.5 centimetres. Calcareous plates were very numerous and over some of them the intima had entirely disappeared, leaving small, roughened, blood-stained areas. There were also seen a few flattened areas, non-calcareous, but containing a soft yellowish material.

The orifice of the innominate artery measured two centimetres in diameter; one centimetre above this orifice was a sacculated dilatation 3.5 centimetres in diameter, to one side of which adhered a firm grayish-red thrombus. This aneurism extended up to the division into carotid and subclavian, which vessels were compressed by the thrombotic mass. The vessels, however, were pervious.

In the right auricle, occupying the auricular appendage and extending into the auricle proper, was an adherent mass five by three centimetres, grayish red on surface, on section showing a softened centre of yellowish, granular material. Right side of heart otherwise negative.

In regard to the interpretation of the clinical signs by the pathological findings, the weak right radial pulse was of course due to the innominate aneurism. The systolic murmur and thrill were probably also produced in this aneurism or possibly in the opening between it and the aorta. It will be noted that no aortic stenosis was present.

In regard to the dulness of the upper sternum and first right interspace detected about a month before death, it would seem as if some change must have taken place during the course of the disease, consisting either of an enlargement of the innominate aneurism, of increased congestion of the innominate veins, of more careful percussion, or perhaps of all three.

Now as to the most marked feature of the case, the unusually loud and rough diastolic murmur, was it caused by the aortic aneurism alone, by the incompetent valve alone, or by the combined effects of the two? To the first hypothesis is opposed the great difficulty of explaining why the effect of the systole and diastole should be so different. As to the second, loud diastolic murmurs are mentioned by a number of authors (Bramwell, Gibson, Broadbent, Steele, and others), and a number of cases are on record. In those cases, however, which do not have a special cause for the loud murmur, such as a torn valve flap, etc., the murmur is generally musical, or intermittent, or both. All, or nearly all such cases, show extensive arterio-sclerosis, as did this case in the aorta and some of the large vessels. It would seem then reasonable to expect to find in each case of rough diastolic murmur a special cause over and above a leaky valve. In this case the mode of production of the murmur may be imagined in this way, that the regurgitant blood current, instead of flowing smoothly through the valves, causing fine vibrations and a soft murmur, formed a whirlpool in the small aneurism, becoming turbulent just at its passage through the valves, and thus giving rise to coarse vibrations and a loud, rough murmur. It is probable that the dilated and sclerotic condition of the aorta had some influence on the character of the murmur. In this connection it is interesting to note that in 22

cases of aneurism of the sinuses of Valsalva,[1] a location slightly nearer the semilunar valve flaps than in our case, no instance of rough, diastolic murmur occurred.

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D.

THE FINER CELL CHANGES IN MENTAL PATHOLOGY.

Angiolella[1] has made a careful review of the finer changes in the nerve cell in various forms of mental disease. He maintains that the basis of a normal and pathologico-anatomical psychology is but just beginning to appear on the distant horizon and that the secret of life and its various functions must be sought in the study of the single cell elements, and their chemical constitution. The change which this constitution undergoes in the various functional states and pathological operations is to be applied to the physiology of the nervous system and is beginning to give results. The method of Golgi has permitted us to realize immense progress in our knowledge of the normal morphology of the nerve cell and to recognize some slighter pathological changes, such as the atrophy and hypertrophy of the protoplasmic processes and alteration in the shape of the cell body; but Nissl's method has permitted us to recognize the intimate changes in the cell. Among these, the most important are the various changes of chromatolysis, that is, the dissolution and gradual disappearance of the chromatic substance of the cell, which is one of the most frequent and best recognized alterations in various pathological conditions. In all degenerative processes this substance is the first to feel the injury of disturbed nutrition and to be altered by it. Since it is known that organic molecules of the highest and most complex chemical constitution and the highest biological signification are the most susceptible to injurious influences and the first to feel their effects, it is fair to suppose that this chromatic substance, Nissl's bodies, is of the highest importance in the constitution of the cell body as producing, accumulating or directing nervous energy. Along with the dissolution of the chromatic substance go alterations in the fibrillary reticulum, with alterations in the shape of the cell body, dislocation of the nucleus and complete destruction of the cell.

Researches upon cases of mental disease are as yet few, and the changes thus far have been found only in general paralysis, some cases of terminal dementia, epilepsy, pellagra and acute delirium. Cases of mania, melancholia and even of paranoia are apt to die either in a stage of terminal dementia or of some intercurrent disease. Experimental research, however, has given us important aid in the study, especially by investigations on poisoning of animals by alcohol and lead, auto-intoxication, infection, exhaustion, and the like. In all these conditions we find degenerative changes of the nervous elements, and the logical deduction is that similar changes may occur in man under the same morbid influences and that these changes may have relation to the functional disturbances which are seen in these conditions. The excitement or the hallucinations of the alcoholic patient, perhaps the paranoia and the pseudo-general paralysis of chronic alcoholism, the delirium of typhoid and pneumonia, the nervous and mental disturbances of uremia and diseases from auto-intoxication, and the psychoses from exhaustion, deprivation of nutritive material or excessive nervous worry and defective repair may to-day be put in direct dependence upon the nutritive and morphological alterations of the nerve cell, and especially the cerebral nerve cell. We are also led to believe that ordinary mania, melancholia, sensory delirium, and the epileptic attack may be occasioned, in predisposed subjects, by the action of toxic products upon the system and the nervous elements; so that alcoholic excitement, for example, may have the same pathogenic mechanism as the ordinary maniacal attack and may differ from it only in the nature of the poisonous substance.

The conception of a psychosis without a corresponding material change may fairly be banished from our knowledge. We do not yet know why, under the action of the same or different poisons, the forms of mental disturbance are so varied, while the cell alterations are nearly uniform. We are still ignorant if the various methods of alteration and degeneration have a special significance in producing the varied forms of functional disturbance or if the production of morbid phenomena varies in relation to the prevalence of one or another form of degenerative process with the different localization of the lesion or with the individual temperament. We are still ignorant if the diversity of temperament varies with the different composition of the cell element or the varying behavior of the elements to the same stimuli.

ACUTE PSYCHOSIS IN COPROSTASIS.

Sölder[2] reports six cases presenting the symptoms of acute delirium associated with intestinal disease. A previously healthy individual is suddenly or rapidly attacked with symptoms of violent mental disturbance, without reasonable cause, and after some indifferent prodromes, lasting a few days. The mental trouble began with confusion, a loquaciousness, a rapid flow of ideas, an expansive and excited emotional condition, soon followed by a clouding of consciousness and agitation, which rapidly sunk to symptoms of motor irritation of the simplest sort, grimacing and various automatic movements. The speech became incoherent and there was a tendency to verbigeration; there was sleeplessness and failure of nutrition; the temperature was not elevated. The physical examination was negative. Constipation existed in all the cases; death followed in ten to fourteen days. The autopsy showed hyperemia and edema of the brain, marked congestion of the lungs, parenchymatous degeneration of the kidneys, heart and liver, and marked coprostasis in the large intestine, with alterations in the intestinal mucous membrane. The history showed that the constipation preceded the mental disturbance, which was regarded as a result of it; and the author concludes that an acute psychosis may be the result of coprostasis and may run a course similar or identical to that of acute delirium, causing death by weakness of the heart in one to two weeks. One case recovered after complete emptying of the intestine. The author reviews the theories as to the relation between the intes-

[1] Reported by Cattell and Steele: Pathological Society, Philadelphia, vol xviii, 1898, p. 203, et seq.

[1] Annali di Nevrologia vol xvi., page 362.

[2] Jahrbücher f. Psych, vol. xvii. p. 174.

tinal trouble and the mental disturbance. The old theory of hyperemia of the brain is not regarded as a sufficient explanation, although hyperemia is usually present. We know too little of the symptoms due to hyperemia, and in ordinary hyperemia, due to disturbances of the circulation, acute delirium does not occur. The second theory is that the trouble is due to an invasion by some form of bacteria, and, in a few cases, bacteria have actually been found in the blood, the urine, and even in the cerebro-spinal fluid. The third theory, to which the author is disposed to ascribe the greater weight, is that of auto-intoxication from the intestine, although he failed to find acetone in the urine in any case and an excess of indican in but one.

Galante [3] reports two cases, with the following conclusions, from the work based upon the researches of Bianchi and Piccinino. Among the psychopathological forms which are confused with acute delirium is one which may be called acute bacillary delirium, which is distinguished from the rest clinically by a greater intensity of the phenomena, by a dynamic phase, which rapidly succeeds the period of excitement, by the very short course, and by the fatal termination; bacteriologically by the presence in the blood and nerve centres of a special bacillus. There are forms of acute sensory delirium, with a febrile course, where the delirium is due to the fever and not to the action of a bacillus. The true bacillary delirium must be regarded as a grave infectious disease, and cannot be certainly recognized without an examination of the blood. Other forms of acute delirium and grave mania may show micro-organisms in the blood, but in smaller quantities and not of the specific type. Galante therefore concludes that these cases of coprostasis are due to the intoxication rather than to any micro-organism from the intestine, which conclusion is strengthened by the fact that in one case, after thorough intestinal evacuation, the symptoms of delirium disappeared.

Ceni and Ferrari [4] have held that the various micro-organisms found in acute delirium represent only a secondary infection, chiefly of intestinal origin and cannot have a definite etiological value. They have studied the blood in 18 cases of mental disturbance of various sorts presenting severe symptoms. In seven cases they obtained positive results in their bacteriological researches. Of these, one was in the status epilepticus, five were cases of severe mania, and one was in the maniacal stage of general paralysis. In all of these seven cases there was considerable elevation of temperature. In each of the cases where there were positive results a pure culture of a micro-organism, which remained constant in the individual, could be isolated. In five cases streptococci were found; in the other two varieties staphylococci were found. From these researches they conclude that severe maniacal excitement, with a clinical aspect analogous to acute delirium, and also marked mental confusion as observed in the status epilepticus, are attended with micro-organisms in the blood only when accompanied by fever. The presence of fever and the course and termination of the disease have no relation to the form of micro-organism but only to the degree of its virulence.

RETROGRADE AMNESIA.

Paul [5] reports a case of retrograde amnesia coming on after puerperal eclampsia, which began on the 14th of December, the patient remaining unconscious for six days; after that there was a condition of confusion, with hallucinations for a considerable period and an hysterical condition which lasted for a number of months. With this there was a marked loss of memory extending backwards to the 1st of October. She knew nothing of the eclampsia or of her hallucinations; later on the amnesia extended backwards to the month of May. The former amnesia was regarded as of eclampsic origin and the latter of hysterical. After a careful study of reported cases, he concludes that the symptom of retrograde amnesia is comparatively common as the result of an hysterical attack, and it may occur in epilepsy and puerperal eclampsia and also after injuries to the skull and in those restored to life after hanging. It may also be due to poisoning by carbonic oxide or alcohol. In all these conditions there is the one common fact that a change of consciousness precedes the amnesia; an alteration of consciousness, without a loss, in hysteria, and a varying loss of consciousness in the other conditions. The cause of the change of consciousness in hysteria is usually some emotional disturbance. In the loss of consciousness in epilepsy and eclampsia, and in hanging, the cause is probably due to a change in the circulation. In injuries to the head it has been referred to the concussion of the brain, and in the poisoning to the amount of the poison. We are wholly ignorant of the nature of the process or of the nature of the occurrence of this symptom.

EXHIBITIONISM.

Seiffer [6] reports seven cases from Hitzig's clinic and has collected 75 other cases in men and 11 in women. Of the men, 18 were epileptics, 17 dements, 13 degenerates, eight neurasthenic and eight alcoholic. In only two of the epileptics was any consciousness of their acts present. It is probably more common among the insane than the statistics show, because most of them are confined in an asylum, so that their acts are not so prominent and do not lead to public scandal. In the reported cases there is a striking similarity in the acts. It is found in all classes of society and at all ages, although very rarely in women. In the majority of cases there is a disturbance in the mental condition which renders them irresponsible.

TUBE FEEDING AND SCURVY.

Klein [7] has made a careful study of the relations between long-continued tube feeding and scurvy, reporting three cases, two of which terminated fatally, in which scurvy developed during long-continued tube feeding; in the third case, the scurvy disappeared after giving meat and lemon juice. He concludes that the special cause of scurvy is to be found in the form of nourishment. The other etiological factors play at most a secondary part. In his own cases it seemed extremely impossible that the invasion of micro-organisms led to the outbreak of the disease, but a secondary invasion is almost certain to occur. The active prophylaxis of scurvy is to be found in the sort of food given, and the form of treatment must be chiefly dietetic; fresh meat, fresh vegetables and lemon juice are to be regarded as the active agents in restoring health. In asylums, not only with patients who re-

[3] Annali di Nevrologia, vol. xvi, p. 357.
[4] Riv. Sper. di Fren, vol. xxiv, p. 182.
[5] Archiv f. Psych., vol. xxxii, p. 251.
[6] Arch. f. Psych., vol. xxxi, p. 405.
[7] Monats. f. Psych., April, 1898.

fuse food absolutely and must be fed by the tube, but also in patients who are insufficiently nourished, or who, on account of their delusions, limit themselves to certain classes of food, we must always consider the danger of scurvy and guard against it by appropriate diet.

ACUTE PERIODIC PARANOIA.

Giannelli[8] considers the question of an acute hallucinatory periodic paranoia. Acute paranoia must represent an abbreviated form of chronic paranoia. It must be a systematized delusional state, beginning more or less suddenly and accompanied, or not, by hallucinations. When there is no bond between the delusional ideas there is no paranoia. The exaggeration of personality is not sufficient to warrant us in affirming the existence of an acute paranoia, which must be clearly separated from mental confusion.

Giannelli is unwilling to accept the position of Ziehen, who seems to think that it is sufficient to formulate a diagnosis of paranoia if we can confirm the co-existence of sensory hallucinatory disturbances and delusions. The symptomatology alone is not sufficient for classification. We must keep in mind the association of symptoms and their succession in order to differentiate those morbid forms which should be kept distinct notwithstanding many points of contact. The existence of an acute systematized insanity of a periodic course does not seem to him proven by the cases thus far reported.

GENERAL PARALYSIS.

Mendel[9] raises the question whether in the last ten years the clinical picture of general paralysis has undergone any changes. Calmeil in 1826 claimed that melancholic conditions were extremely rare, but in 1859 he asserted that the melancholy form was almost as common as the delusions of grandeur. Mendel himself, in the thirty years in which he has studied general paralysis, has been struck especially by the fact that the typical form of general paralysis has become much less common than the demented form. In the older observations the typical form was seen in more than half the cases, and Mendel himself in 1880 had found it 55 times in 180 cases. In the last eight years, however, it has been found only 24 times in 194 cases. The delusions of grandeur, even in the typical form, are by no means so excessive as they formerly were. In 1880 Mendel had noted the demented form in 37 cases, whereas in the last eight years it had been noted in 70. The frequency of the demented form, moreover, Mendel thinks, would be still more evident if we were to take into consideration the no small number of these cases who, on account of their quiet condition, are not obliged to be sent to an asylum and are seen only in private practice or in general clinics. This change can hardly be due to improved methods of diagnosis, since the time has been so short. A second change, which of late years has been striking, is the comparatively frequent occurrence of considerable remissions, although accurate statistics are lacking to prove this point. They occur, however, in a number of cases which have presented marked mental and physical symptoms and also in the early stages, and may last for a year or more. The course, in general, seems somewhat milder, but, on the other hand, the disease is much more frequent and is noted more often in women. In 1859 Neumann claimed that general paralysis occurred only in men, but at the present time one-fifth of the cases are found to be in women. The number of cases in children also shows a marked increase, and in children the disease is about as frequent in girls as in boys. The cause of the increase is attributed to the increase in the amount of syphilis and in the increased struggle for existence; and Mendel refers the increase of the disease in women to their increasing participation in the social struggle and the so-called "emancipation" of the sex. The cause of the change in form is obscure. He does not regard it as due in any way to previous antisyphilitic treatment, since there seems no change in the cases which have been thoroughly treated and those which have not; nor can it be explained by an earlier commitment to an asylum and better treatment; neither does he consider that our brains in the last twenty-five years have become less capable of resistance and are no longer capable of maniacal exaltation, and that the change therefore is not due to an increasing degeneracy. It may possibly, however, be due to some change in the syphilitic poison.

(To be continued.)

[8] Jahrbücher f. Psych., vol. xvii, p. 144.
[9] Neur. Central., Nov. 15, 1898.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

THIRTEENTH ANNUAL MEETING, HELD IN NEW YORK, MAY 31, JUNE 1 AND 2, 1899.

(Concluded from No. 6, p. 142.)

THE KYPHOTONE — A MACHINE FOR THE FORCIBLE CORRECTION OF THE DEFORMITY OF POTT'S DISEASE.

DR. R. TUNSTALL TAYLOR, of Baltimore, exhibited this instrument, which was intended to make traction backward on the trunk and spine during the application of the plaster jacket. The advantages claimed for it were: (1) The spine was fixed in the most advantageous position; (2) the rapidity and ease with which the jacket could be applied; (3) its applicability to cases of mid-dorsal, lower dorsal and lumbar caries; (4) the removal of the superincumbent weight from the diseased articular processes, and (5) the inexpensiveness of the apparatus.

SOME NEW TRACTION APPARATUS.

Dr. Taylor also exhibited and described a new traction apparatus, characterized by simplicity of construction and provision for sterilization and securing the highest degree of cleanliness. His folding steel apparatus for making extension with weight and pulley and inclined plane was especially worthy of commendation.

A SUMMER PLASTER-OF-PARIS JACKET.

DR. TAYLOR and DR. S. H. MCKIM also exhibited a method of making plaster jackets by means of figure-of-eight bandages, so as to leave a considerable area anteriorly exposed.

CELLULOID JACKETS.

DR. AUGUSTUS THORNDIKE, of Boston, reported that although the celluloid bandages that he had de-

scribed last year had worked well at first, he had subsequently been much disappointed with the process.

DRS. SHERMAN and TOWNSEND said that they had a like experience with the working of celluloid.

DR. R. H. SAYRE said that he had learned that it was better to work with sheets of celluloid, placing them on a wire tray in a shallow box, and exposing them for three hours to the vapor of acetone. A thorough and uniform action of the acetone was best secured by soaking sheets of blotting-paper in acetone and laying them under the tray supporting the celluloid sheets. After the sheets had been sufficiently softened, they were to be applied to the mould and fastened with either muslin or rubber bandages. In this way a beautiful corset could be made, but it was so intolerably hot that the patient would refuse to wear it, and this too, even after holes had been provided for ventilation.

DR. E. G. BRACKETT, of Boston, said that his experience had been that if the celluloid were taken off the mould before the expiration of two or three weeks it would surely curl up.

FURTHER OBSERVATIONS ON THE TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

DR. ROYAL WHITMAN, of New York, read this paper and exhibited quite a large number of patients that had been treated by him. He had operated 32 times on 21 patients by the bloodless method, and all had been treated more than two years. Of the 19 open operations that he had done, 15 had been in the present year. There had been no operative infection of the wound, and no deaths. Under proper conditions he considered the open operation to be free from danger and easy of performance. He had treated in all 41 cases, 27 of them by the functional method of Lorenz. On seven patients both methods had been used. Of the 14 unilateral cases, nine had been treated by forcible correction, and when this had proved unsuccessful had been supplemented by the open operation. He had had three perfect cures by the bloodless method, and had obtained an excellent result by this method in a girl of seven years, although it was ordinarily not very successful in these older children.

CONGENITAL DISLOCATION OF THE HIP.

DR. T. HALSTEAD MYERS, of New York, exhibited a child of three years upon whom he had successfully operated in 1895 by the bloodless method. He had since that time treated 15 other cases in the same way. Five of these would probably yield a perfect ultimate result; in three the treatment had failed.

DR. RIDLON said he could not agree with Dr. Whitman concerning the great disability observed in cases of congenital dislocation of the hip, as the adult patients whom he had seen had been able to walk fairly well, though not gracefully. In the majority of instances they could walk fairly long distances with comparative comfort.

DR. B. E. MCKENZIE said that he had employed the bloodless method in two, and the open operation in one case. He had operated upon a child of nine years, and there was every prospect of a good result ultimately.

DR. L. A. WEIGEL said that radiographs of these cases seemed to indicate that there was an arrest of development, not only of the femur, but of the whole side of the pelvis.

DR. H. A. WILSON said that it was not at all uncommon for orthopedic surgeons to meet with adults in whom the functional condition was good, and in view of the mortality and the anchylosis attendant upon the open operation, it was well to counsel conservatism in this class of cases.

DR. SHERMAN said that these children were usually brought to the surgeon not because of disability or pain, but because of the ungraceful gait. Dr. Whitman's results were infinitely better than anything that had been shown him in Vienna by Lorenz four years ago, and were encouraging to the highest degree.

DR. WHITMAN reiterated the statement that these patients did suffer pain and presented a relative disability. Intermittent force in young subjects would best bring down the head of the bone.

SYMMETRICAL ENLARGEMENT OF BOTH LEGS FROM POSSIBLE LYMPHANGITIS.

DR. S. KETCH, of New York, presented a patient exhibiting this condition, which he attributed to the occlusion of the deep lymphatics.

DR. W. R. TOWNSEND exhibited a photograph of a case in which there was a similar enlargement, although confined to one side.

OSTEOMA OF THE FEMUR.

DR. KETCH exhibited a radiograph of such a case.

OBSCURE INJURY TO ELBOW.

DR. WEIGEL presented a young woman who had injured her elbow in a bicycle accident. He had at first treated her by rest of the joint, and she had done well. She had then come under the care of a physician who had insisted that there was a fracture, and had proceeded to refracture it under an anesthetic, with the very natural result of making the condition worse. A radiograph taken after the accident showed plainly that there had been no fracture.

UNUSUAL DEFORMITY FOLLOWING OPERATION FOR KNOCK-KNEE.

DR. W. R. TOWNSEND presented a girl of thirteen years having a dreadful distortion of her limbs following an osteotomy which another surgeon had done on her in childhood. This surgeon admitted that after the osteotomy the wound had become septic. A radiograph showed that the lower end of the femur had been rotated out at a right angle.

A CASE FOR MUSCLE TRANSPLANTATION.

DR. V. B. GIBNEY exhibited a boy of six years having an extreme recurvation. He intended to try the effect of transplantation of muscle.

ENLARGEMENT OF TIBIAL TUBERCLES.

DR. HENRY LING TAYLOR, of New York, presented two cases of this kind, one a boy of twelve, and the other a boy of sixteen years. In the first case there had been no assignable cause; in the second there had been a trauma. In both the periostitis had been relieved by the topical use of iodine.

Several of those present reported similar cases, occurring, for the most part, in athletes.

PARTIAL LUXATION OF THE HUMERUS FOLLOWING ANTERIOR POLIOMYELITIS.

DR. J. H. WATERMAN, of New York, presented this case. The patient was a youth who had probably had an anterior poliomyelitis of the fifth cervical

segment in infancy. Irritation of the pectoralis major produced dislocation of the shoulder.

SPASMODIC TORTICOLLIS.

DR. CHARLES E. THOMPSON, of Scranton, present by invitation, reported this case, and exhibited both this patient and another whom he had cured of the same affection. In both instances several sections of nerves had been demanded before relief had been afforded.

CASES OF TUBERCULAR AND PURULENT ABSCESSES OF JOINTS TREATED WITH CARBOLIC ACID.

DR. A. M. PHELPS, of New York, made some remarks on his work in this line. The essential feature of the treatment was the utilization of Dr. Seneca D. Powell's discovery that alcohol was a perfect antidote for carbolic acid. The carbolic acid was injected into the cavity, allowed to remain for two minutes, and then the cavity washed out first with alcohol, and lastly with sterile water. In every case so treated, except those in which drainage-tubes had been used, primary union had occurred. Moreover the patients so treated had been discharged in from two to five weeks, instead of remaining several months, as they were compelled to do when treated by the more usual methods. Dr. Phelps said that the manner in which the alcohol acted was not yet known, but he suspected that it formed with the albuminates in the mucous layer of the skin a harmless compound, which was absorbed and acted as a powerful bactericide.

DR. R. H. SAYRE said that he was reminded of Callender's work some years ago, with carbolic-acid injected into joints. The method had been abandoned because of the numerous fatalities from carbolic acid poisoning. If this danger could be eliminated, the method just described by Dr. Phelps should have a great future.

MULTIPLE DEFORMITIES OF THE EXTREMITIES.

DR. GEORGE R. ELLIOTT, of New York, reported such a case occurring in a child of eleven years, and apparently the result of either intra-uterine traumatism, or, more probably, primitive changes in the nervous system.

DR. EDWARD D. FISHER, of New York, said that this was apparently one of those rare instances of diffuse myelitis occurring during intra-uterine life.

DR. S. B. ONUFF, of New York, said that the fact that the changes in this case were spread over the whole anterior horns seemed to argue in favor of their being primary rather than secondary.

POINTERS ON THE LEATHER SPLINT.

DR. A. J. STEELE, of St. Louis, under this caption described his method of making leather corsets. He said that the ideal leather for this purpose was that which had been only half tanned, but, of course, it could not often be procured. After having softened the leather by soaking in water, he wraps it around the cast, and then by means of a mechanical device binds it on very tightly with stout cord. It is then baked in an oven at a temperature of 180° or 190° F. for two or three days.

DR. MCKENZIE remarked that he had found rawhide corsets very useful and exceedingly durable; the chief drawback was that they required two or three weeks to dry.

THIRD DAY.

NEW INSTRUMENTS — AN OSTEOCLAST; A BRACE FOR FLAT-FOOT AND PARALYSIS; A BRACE FOR FORCIBLE EXTENSION AND FLEXION OF THE ELBOW.

DR. G. G. DAVIS, of Philadelphia, presented these instruments. The osteoclast was designed for breaking the bone accurately after it had been partially divided by the osteotome. The elbow brace was intended, like the Stromeyer apparatus, to produce forced extension and flexion, and was an improvement on that apparatus in that by a shifting fulcrum a greatly increased degree of flexion could be obtained.

A NEW HEAD SUPPORT.

DR. S. L. MCCURDY, of Pittsburg, exhibited an X-shaped frame, made of heavy steel wire, which he devised as a head rest for cases of cervical caries. Pads were placed at the four points of support, that is, the occiput, chin, sternum and back below the vertebra prominens. Dr. McCurdy also exhibited a new additional chin support.

POCKET GONIOMETER.

DR. W. E. WIRT showed a goniometer, having telescopic legs, which he carried around in his pocket for a number of years, and had found very useful.

Dr. Wirt also exhibited a

KNEE BRACE FOR CORRECTING DEFORMITY.

It was a simple and cheap instrument which pushed the head of the bone forward while making extension.

THE CORRECTION OF FLAT-FOOT.

DR. H. A. WILSON exhibited a simple instrument that he had devised for correcting flat-foot by means of force applied by a screw in appropriate directions.

DR. WEIGEL saw no advantage in Dr. Davis' elbow brace over the simpler one in which the same object was accomplished by levers placed at the side of the arm.

DR. SHERMAN thought Dr. McCurdy's head-support would allow of too great lateral play.

DR. WHITMAN advised that the correction of cases of long-standing flat-foot should be accomplished by holding the foot between the knees and subjecting it to extreme abduction.

FRACTURE OF FEMUR WITHOUT THE USUAL SIGNS.

DR. C. L. STARR, of Toronto, reported a case occurring in a child of three years, in which, although there had been a fracture at a point just beyond the junction of the head and neck of the femur, as demonstrated at autopsy, there had been no pain or the usual signs, and a positive history of limping for only two weeks previously. After the post-mortem examination, the parents recalled the fact that only six weeks before the limp had developed the child had fallen from a high chair.

POSITION SYMPTOMS IN JOINT DISEASE.

DR. HARRY M. SHERMAN, of San Francisco, presented in this paper an elaborate study of these symptoms and of the various theories propounded to explain the positions assumed. He stated that so far as the theories of Hilton and of Phelps were based on one group of muscles, they must be laid aside. In tuberculosis of a joint some of the osseous trabeculæ are destroyed, and a spot of bony weakness produced, a fact

which seemed to be appreciated by the person involuntarily shrinking from putting work on this spot.

SOME SALIENT POINTS IN THE TREATMENT OF HIP DISEASE.

Dr. B. E. McKenzie read a paper with this title. In his opinion no other apparatus had been so successful as the brace of Mr. Thomas and its modifications. Care should be taken to secure sufficient bending at the knee. The tendency in the later stages to abduction could be counteracted and the muscular spasm overcome by the expedient of making traction on the side opposite to the one affected. He had abandoned the idea that the splint should also act as a crutch. Constitutional treatment, as in other tuberculous affections, was indicated. After excision a perfect recovery could never occur; complete restoration of function was sometimes possible after proper mechanical and constitutional treatment.

THE CONSERVATIVE SURGICAL TREATMENT OF TUBERCULOUS DISEASES OF THE JOINTS.

Dr. C. L. Starr, of Toronto, presented, by invitation, this paper. He advised incising and curetting tuberculous cavities, swabbing with chloride of zinc or with carbolic acid, injecting iodoform emulsion and finally packing with iodoform gauze.

ADDITIONAL VIEWS ON THE TREATMENT OF HIP DISEASE.

Dr. A. B. Judson, of New York, presented a paper with this title. His method of treatment consisted essentially in educating the patient to the habitual observance of the normal rhythm of locomotion. As a result of this training, the limb which had been abducted gave up some of its abduction in order to reach the ground more conveniently, with the result that there was a decrease in the apparent shortening.

Dr. Weigel said that if the focus of disease could be definitely located — and it could be at present with the aid of the x-ray — the treatment advocated by Dr. Starr should be successful.

Dr. Judson said that he could not agree with Dr. Sherman that muscular action could be entirely eliminated, for it was this, in his opinion, which caused fixation.

Dr. Steele said that he, too, was not yet prepared to throw aside muscular spasm and the valuable experience of the past with reference to the action of traction.

Dr. Whitman thought Dr. Sherman should have paid more attention to the part played by habitual use in the final production of deformities, rather than limiting himself so closely to bone disease as an explanation of all these symptoms.

Dr. G. G. Davis said that he had tried the method of trephining the bone at the supposed site of the tubercular focus, and had found that it had apparently stopped the disease.

Dr. Judson was inclined to think that for a long time in hip disease it was inaccurate to speak of the joint as fixed.

Dr. Sherman said that when he had said that there was no muscular spasm *per se* he had meant that it did not originate in the muscle, as in the case of cramp. The muscles were implicated, but only as the servants of the bones and of the spinal cord. As at the beginning the sole lesion was in the bone, one must look to that lesion for the motive.

SOME CLINICAL FEATURES OF RHEUMATOID ARTHRITIS.

Drs. R. T. Taylor and S. H. McKim, of Baltimore, presented this paper. They asserted that this disease was usually bilateral, and rarely presented any abnormality in the bones or cartilages. A characteristic feature was the involvement of the cervical portion of the spinal cord.

OLD SUBCORACOID DISLOCATIONS OF THE HUMERUS.

Dr. Griffith, of Kansas City, said that he had found in operating on two such cases that even with a very long incision and prolonged and violent manipulation he had not been able to reduce the dislocation until the long head of the biceps had been severed. He had also discovered that when this had been done the replacement of the head of the bone was made quite easy by the use, as a lever, of a long and powerful periosteotome having one end sharply curved. The division of the biceps in this manner caused no subsequent trouble.

Dr. G. G. Davis said that in operating on a case of old subglenoid dislocation he had found it necessary to loosen nearly three-fourths of the attachment of the pectoralis major and divide the attachments of the supra- and infra-spinatus muscles, and finally the capsule around and below the head.

HEAT AS A THERAPEUTIC MEASURE.

Dr. S. L. McCurdy, of Pittsburg, read a paper with this title, in which he detailed some observations that he had made with a view to determining the temperature of the structures below the surface, and the effect of such heat on bacterial life. He found that the temperature of these deeper structures was practically unaffected.

Dr. Wirt said that the hot air acted chiefly on the circulation in the blood-vessels and in the lymphatics, and upon the nerves of the part.

SURGICAL INTERVENTION IN CASES OF SPASTIC PARALYSIS.

Dr. B. E. McKenzie, of Toronto, said that in the treatment of these cases he favored tenotomy of the abductors and abduction of the limb to an angle of 60° or 90°, and the retention of this position for several weeks. The results from this treatment, even in most forlorn cases, had been extremely gratifying.

Dr. S. Ketch said that he had reached about the same conclusions as had the reader of this paper. Until the time had arrived when the contracture had become less prominent it was not proper, in his opinion, to perform tenotomy. Mechanical appliances for these defective children were usually harmful.

Dr. Ridlon believed that all these children should be operated on when young because the irritation was thereby relieved and the mental condition often improved. He had obtained good results from the use of braces in such children.

Dr. Sherman said that he cut the tendons freely and separated the legs as widely as possible, and if they relapsed the operation was repeated.

Dr. Judson relied a great deal upon education in the treatment of these unfortunate cases, but used mechanical treatment where locomotion was interfered with.

Dr. N. B. Shaffer said that if these cases were carefully watched there would be found a time when

the spasticity would diminish, and he learned to defer treatment until this stage had been reached.

DR. E. H. BRADFORD, of Boston, said that while much could be accomplished by patient mechanical treatment, he confessed that the cure was much more rapid and thorough when tenotomy was done.

THE STATE CARE OF INDIGENT CRIPPLED CHILDREN.

DR. ARTHUR J. GILLETTE, of St. Paul, spoke of a new State hospital for the care of such children.

THE CAUSE OF FAILURE AFTER PHELPS'S OPERATION FOR CLUB-FOOT.

DR. DANIEL LA FERTÉ, of Detroit, present by invitation, read a paper with this title. He insisted that it was essential to open the mediotarsal joint, and, in severe cases, to divide the plantar ligament. After operation the usual methods for developing the muscles should be used, and they would be made easier if it were not necessary for the patient to wear any apparatus.

DR. MCKENZIE said that he had long been of the opinion that Phelps's operation proceeded on a wrong principle, and that the cutting of the tendo Achillis should be the finishing point instead of the point of beginning. Where the equinus could not be corrected it was because the astragalus could not be pushed in between the malleoli. In such cases it seemed to him wise to remove the astragalus.

DR. W. O. PLIMPTON said that the object of cutting the tendo Achillis first was to afford better leverage for the bringing down of the heel.

PROTHESIS, A BRANCH OF ORTHOPEDIC PRACTICE.

DR. A. B. JUDSON presented in this brief paper descriptions of several of the more important mechanical devices used by him in his work.

A PRELIMINARY REPORT OF A STUDY OF SHORTENING OF THE TIBIA IN CONNECTION WITH TUBERCULOUS DISEASE OF THE HIP.

DR. RUSSELL A. HIBBS, of New York, presented by invitation this paper. A study of forty-one cases had shown that the greatest shortening had occurred in the non-suppurative cases. He concluded, from his observations, that shortening of the tibia might be expected in a large percentage of cases of hip disease where it had lasted for one year.

The following officers were elected: President, Dr. Harry M. Sherman, of San Francisco; Vice-Presidents, Drs. R. Tunstall Taylor, of Baltimore, and A. R. Shands, of Washington, D.C.; Secretary, Dr. John Ridlon, of Chicago; Treasurer, Dr. E. G. Brackett, of Boston.

Recent Literature.

Wesen, Ursache und Behandlung der Zuckerkrankheit (*Diabetes Mellitus*). By DR. ALBERT LENNÉ, in Bad Neuenahr. Berlin: Verlag von S. Karger. 1898.

Diabetes mellitus is not only more often recognized at present than heretofore, but apparently the modern ways of living are increasing its frequency.[1] There is not a disease in which time spent in the study of the treatment of the case in hand brings so prompt a reward, and correspondingly few diseases which show so plainly a lack of proper attention. For all these reasons we welcome Dr. Lenné's book, which is an octavo of 152 pages.

In the first half of the work the writer discusses in two chapters the normal metabolism of the body and its modifications in diabetes. In two more chapters the symptoms, complications, causes and the prognosis, course and diagnosis are reviewed. The remaining half of the book, which is far and away the better part, is concerned with treatment. The author's experience embraces 352 cases, which is more than twice the number occurring in the Massachusetts General Hospital in seventy-four years. Though a physician in a bath resort (Neuenahr), Dr. Lenné studiously avoids bringing this to the foreground.

The discussion of diabetes contains little that is new, yet presents the recent work in an agreeable form. The book does not pretend to be exhaustive, and its scope is ample enough for the general practitioner. The chapter on treatment is so excellent that the reviewer regrets that it is not published in English. American doctors cannot too often have the basis of a rational diet in diabetes placed before them. "The first aim in the treatment of diabetes under all circumstances and in all cases must be to overcome the glycosuria . . . yet never at the cost of the patient's general condition." In a disease in which the abnormal course certain food-stuffs take is the striking feature the study of the diet becomes the principal factor. And Lenné commences at the beginning and in a clear exposition shows the relation of calories to kilos, and the nutritive values of the various classes of foods. Just as the carbohydrates must be limited, so must the albuminous food be curtailed. Prout, in 1820, called attention to this latter fact, which Bouchardat, Cantani, Naunyn, and, in this book, Lenné so strongly emphasize. Indeed Lenné bases his prognosis to a considerable degree on the amount of proteid food it is necessary to give the patient to maintain his body weight. The book is very helpful in the suggestions it contains for ways in which fats may be inserted into the dietary.

Treatment is commenced after an examination of the twenty-four hours' amount of the urine of the patient living on his customary diet. A comparison of the sugar and urea in the urine with the carbohydrates and proteids of the food for the same period shows the amount of carbohydrates unassimilated and indicates the fate of this portion of the proteid molecule. He then endeavors to gradually make the patient "sugar free," and having accomplished this result keeps the patient on the diet required for this purpose for a few days. Small quantities of carbohydrates are then allowed and the "tolerance" of the particular individual for sugars and starches estimated.

"I am moreover of the opinion that the diabetic needs bread surrogates as little as any especial form of food. It is only the preparation and combination of the food materials which demand certain precautions —except for this the diabetic can eat, so to speak, what a healthy person enjoys." It would be a pleasure to record the many helpful little wrinkles Lenné inserts, but for these we must refer the reader to the original.

All drugs have failed the author, though opium has been of service in combating special symptoms. The administration of sodium bicarbonate continuously or for alternate weeks is recommended.

[1] A most interesting summary of statistics bearing on this point can be found in Williamson's Diabetes Mellitus and its Treatment. Macmillan, 1898.

THE BOSTON

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THURSDAY, AUGUST 17, 1899.

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ACCIDENTS AND LAWSUITS.

THE recent trolley-car accident in Connecticut, the frequent mishaps on the electric roads in Brooklyn, N. Y., and the shocking loss of life through a defective wharf at Bar Harbor, bring once more before our minds the ever-present problem of the relations of corporations and companies to the people they are supposed to serve. From time to time our sympathies and feelings waver between the claims of those injured and the attitude of defence at all hazards of the corporations held responsible. It requires but a small measure of observation to see that the travelling public has, in general, brought itself to a frame of mind in which it is ready to grasp at merest trifles if thereby it may gain some money reward. There can be no doubt that this, in itself, is pernicious and provocative of considerable injustice both to the individual involved as regards his personal health, and also to the company as regards its money liability. That verdicts in such cases are often unjust and exorbitant is notorious, and that juries are apt to be prejudiced in favor of the individual is a no less commonplace observation.

To one of a judicial frame of mind the existing state of affairs seems not infrequently a travesty on justice, so trivial frequently are the original grounds for which suit is brought, which must at the end often, of a long period of waiting, to the plaintiff's physical detriment, be so dearly paid for by the corporation concerned.

This is one standpoint. When we contemplate the accidents of the past few weeks, all due ultimately to human carelessness, our attitude changes. The feeling is forced upon us with growing conviction that any and all means which will force upon those responsible for large numbers of lives the necessity of every conceivable precaution against accident must be taken, and if they are not, that the companies must be held responsible to the utmost limit for the injuries and death resulting. There is absolutely no question that the immanence of lawsuits has such a deterrent effect; that it inculcates precaution, and thereby increases the safety of the people at large. We know of no other means which could bring this about in like measure, and in the light of a great accident and the enormous suffering of which it is the source, we should certainly in every possible way bring those responsible to a realizing sense of the full extent of their responsibility.

We are optimistic enough to think that the present arrangement is, on the whole, conducive to the best results. If the people at large can be restrained from pressing false and insufficient claims, and if the responsible corporations can be held in wholesome restraint and continual watchfulness, through fear of the law, there will be attained, no doubt, the maximum of justice. To accomplish this we need an improved public sentiment among the claimants for damages, and an ever increasing vigilance on the part of the courts in discovering liability.

We recall on one occasion hearing a sociologist of prominence say that the questions of the relations between corporations and the people at large are assuming a vast social significance, quite apart from their medical or legal bearing. As civilization advances this must, no doubt, be more and more the case. In the meantime, it is desirable to bring about as far as may be, a just relationship between the two, by education on the one hand, and rigid legal control on the other.

A NEW HOSPITAL BUILDING FOR DEER ISLAND.

AN addition is soon to be made to the existing hospital of the Penal Institution's Department at Deer Island. As our readers no doubt know, there has for many years been in operation at Deer Island an excellently equipped hospital for the treatment of persons either sick at entrance to the institution or of those contracting disease during their stay. Naturally the demands for treatment are not great at any time, nevertheless in so large a population as the island unfortunately has, there is rarely a time when the existing wards are not more or less full.

There has up to this time been no adequate means of isolating patients suffering from venereal disease and tuberculosis from other inmates, to whom they might be a menace, nor of properly secluding patients sent to Deer Island temporarily, pending an expert opinion as to their sanity.

The projected addition to the present hospital buildings is designed to accomplish this end. It will be connected with the existing hospital by a corridor; 160 feet in length, and so protected that communication between the two divisions may be absolutely controlled. The main part will consist of a central rotunda, 35 feet square, from which will radiate four wings, 25 feet wide and 68 feet long. Each wing will have ten beds in the open wards, a diet kitchen, a linen room, a toilet apartment and an isolation ward.

The wards will be single stories, with a pitch roof, the rotunda one and one-half stories high. All the rooms will have a clear story, and be heated by indirect radiation, the corridors to have the direct heating. The wards for consumptives will be at the left, each of which will have a sun-room at the extreme ends.

There will also be an observation ward somewhat separated from those just described, which will be provided with three separate rooms. This arrangement will no doubt facilitate the speedy determination of mental defects in those sent for that purpose, and add greatly to the convenience of the hospital.

The addition of such a building is a distinct step in advance. Isolation of certain cases at public institutions is at present a decided need; the fact that this step has been taken at Deer Island reflects much credit on the policy of the existing administration.

THE DANGERS OF OVER-ENTHUSIASM.

A hobby, even if it be a so-called scientific hobby, is a dangerous thing. There is a strong tendency in the human mind, which facts often do little to controvert, to see what it wishes to see, and what most conduces to the particular end it may have in view. Examples of this are not far to seek; we see it in the enthusiasm which finds a specific virtue in a certain drug that others find inefficacious, or in devotion to a theory which only half explains, or again, in literary lines, we cannot but suspect that whatever the ultimate truth may be, the adherents of the Baconian hypothesis would see more correctly could their ardor for their theory be somewhat cooled.

On the other hand, it is through such enthusiasms that results are gained, and there are after all always enough who think differently to keep the balance fairly even. Enthusiasm which ceases to be reasonable quickly meets with as vigorous an opposition. In the field of criminal anthropology and the determination of conditions of degeneracy, the spirit of over-enthusiastic research has run riot within the last few years. Statistics here are peculiarly fallacious, inasmuch as the whole physical and mental structure of the person must be taken into account, a fact which has been too often overlooked by investigators. The so-called degenerate ear is a case in point. We would suggest to our readers that they study all ears in an electric car for example, or in their own circle of acquaintances, and then compare them with the ears of a recognized degenerate type, as of criminals or paupers. It will quickly be apparent how meaningless this sign in itself is. We were interested a few weeks since in noting what excellent and undegenerate ears the residents of a school for feeble-minded had, quite up to the average of what one sees everywhere. And yet we still find noted in medical papers details of ears as signs in themselves of degeneracy.

The work of Prof. Cesare Lombroso has long seemed to us an example of the danger of over-enthusiasm. To the frame of mind into which he has worked himself by much excellent observation, all facts which to others are indifferent, or indications, perhaps, of special fitness, are proof of the essential correctness of his standpoint. The following clipping from the *British Medical Journal* shows the type of reasoning to which we refer:

"Prof. Cesare Lombroso, who has had an opportunity of studying casts of the cerebral convolutions and microscopic preparations of the brain of Vacher, *l'eventreur*, guillotined at the end of last year, has satisfied himself that the French 'Jack the Ripper' presented all the characters of the epileptic and congenital criminal. In both hemispheres, but particularly in the left, there was a communication between the Rolandic and Sylvian fissures; on the right side the latter also communicated with the post-Rolandic fissure. On the left side, the foot of the ascending parietal convolution presented several abnormal sulci; the fissure of Rolando ended above in a bifurcation on both sides; on the left side the interparietal fissure did not communicate with the post-Rolandic fissure, and was broken by numerous folds. Histological examination by Nissl's method of a small portion of the frontal lobe revealed atrophy of both granular layers, enlargement of the pyramidal cells, which were also very scanty in number, and the existence of a certain number of nerve cells in the white matter."

To a man armed with a preconceived theory, the cerebral convolutions have always been a tempting field, but we had supposed that investigation had long since gone beyond the point of attributing significance to anomalies of the Rolandic or other fissures and gyri, or to the examination of a "small portion" of the frontal lobe. Such superficiality strikes us as beyond measure unscientific. The foregoing may, no doubt, be incorrectly reported, but it serves to illustrate our point that enthusiasm has its dangers, and that its results are always to be taken with a conservatism proportionate to the degree of the enthusiasm.

MEDICAL NOTES.

Professor Röntgen called to Munich. — Prof. C. W. Röntgen, of Würzburg, has received a call to the University of Munich.

Small-Pox Outbreaks. — Up to August 3d there had been, according to the *Medical News*, some thirty cases of small-pox in Pittsburg and neighboring towns, all of which places are on the line of the Pennsylvania Railroad. No money has been appropriated for the establishment of a quarantine, and an appeal has been made to the Westinghouse Electric Company for funds for the purchase of vaccine virus and for quarantine expenses. An epidemic of small-pox has broken out in Claiborne County, Tenn., on the Kentucky border. It is believed that the efforts

of the authorities to prevent the spread of the disease will be successful.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 16, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 59, scarlet fever 10, measles 7, typhoid fever 18, small pox 1.

Vaccination at Everett. — No new cases of small-pox have developed at Everett, and the Board of Health has discontinued free vaccination. The infected district will, however, be quarantined for several days.

Typhoid Fever at Jamaica Plain. — The small epidemic recently reported at Jamaica Plain has subsided. No new case has been reported from the infected district for more than a week.

Quarantine against Virginia Ports. — The quarantine against vessels from Virginia ports on account of yellow fever was recently raised. Since August 2d, when the quarantine was ordered, eleven vessels have arrived from Chesapeake Bay. None of them were infected.

Cholera Infantum. — There has been a less number of cases of cholera infantum during the past week than for the corresponding week last year, the figures being twenty-seven this year, sixty-seven last year. This is no doubt due to the unusual weather conditions.

Poor Schoolhouse Plumbing. — Owing to the unusual frequency of contagious diseases in Cambridge this spring, attention has been directed to the sanitary conditions of the schools. A thorough investigation is now under way, with the result that much of the plumbing has been found to be in an extremely defective state. It is stated, for example, that in the new English High School, which was completed about eight years ago and is a very expensive building, over two hundred leaks were found in the piping.

NEW YORK.

Small-Pox at Niagara Falls. — There have been a number of cases of small-pox recently at Niagara Falls, and on August 9th three additional cases were reported. The State Board of Health has succeeded in tracing the origin of the outbreak to a patient in whose case a mistaken diagnosis of chickenpox was made.

A New Veterinary College. — It is announced that the two veterinary colleges, the New York College of Veterinary Surgeons and the American Veterinary College, have been consolidated, and will hereafter constitute the veterinary department of the University of the City of New York. The school is to be known as the New York American Veterinary College, and it will be on a like footing with the six other schools of the University. The College of Veterinary Surgeons was chartered in 1857, and the American Veterinary College in 1875, and Prof. Alexander F. Liantard of the latter institution is to be the Dean of the Faculty of the consolidated school. Most of the Faculty have been taken from the two colleges, Dr. Liantard being professor of anatomy, clinical surgery and veterinary jurisprudence, but some of its members are new appointments. Among the latter are Dr. Edw. K. Dunham, of the University and Bellevue Hospital Medical College, professor of comparative pathology; Dr. William H. Park, of the same school, professor of bacteriology; and Dr. J. B. Stein, of the New York Dental College, professor of physiology. In a statement in regard to the consolidated school issued by Chancellor McCracken of the University, he says: "These two schools have outranked in age all other veterinary schools in the country, and have educated more than one thousand veterinary surgeons. Like the veterinary school of Harvard University and that of the University of Pennsylvania, this school is placed upon a strictly university footing. Co-ordination and co-operation with the University and Bellevue Hospital Medical College will thus be secured to the advantage of both schools and of medical science, and to the promotion of the health of the community. In order to enter the school a student must have obtained forty-eight counts in a Regent's examination, this being considered the equivalent of a high-school education. The Regents have been gradually raising the requirements for admission to the professional schools, and in this I think they have performed an important public service."

Arrest of Four Attendants at Manhattan State Hospital. — Four keepers of the Manhattan State Hospital for the Insane on Ward's Island have been arrested on the charge of killing a paretic patient in the institution on August 5th. The case was reported to the Board of Coroners by Dr. Percy Bryant, the Medical Superintendent, who stated that the patient, who was thirty-four years of age, had been a powerful man and a wrestler. On the morning of the 5th he struck one of the attendants in the neck with his fist. He was then held on the floor by three attendants, who had come to the assistance of the first, until his paroxysm subsided. He then washed his face, returned to the ward, sat down in a chair, and became very pale. A physician was immediately sent for, but the patient died in a few minutes. The official report of coroner's physician, Dr. Hamilton Williams, of the autopsy made by him declared that death resulted from hemorrhage and shock. Among the injuries noted were fracture of six ribs and bruising of the intestines, with a rupture of the peritoneum.

Fire at Fort Hamilton Hospital. — A fire which caused considerable excitement, but which was extinguished before more than a few hundred dollars' damage was done, occurred early in the morning of August 7th in the military hospital at Fort Hamilton.

There were fourteen patients in the wards at the time, but all were promptly removed as soon as the fire was discovered.

Gift of an Ambulance. — A lady of Sing Sing who desires that her name shall be withheld has presented, through Dr. W. A. Winer, a handsomely appointed ambulance, costing about $600, to the Ossining Hospital in that place.

Death rather than a Bath. — The warden of the Hudson County Jail at Jersey City is authority for the statement that Giacomo Moreda, an Italian wife murderer, who committed suicide on August 8th, killed himself to avoid taking a compulsory bath. The man had not washed his face or hands during the three months he spent in jail, and death appears to have been preferable to him to being placed in a tub and scrubbed till he was clean, a treatment that was ordered for him in order that he might be in a fit condition to put on a new suit of prison clothes which the warden had provided.

Death from Starvation. — The Rev. J. Hughes Parry, fifty-four years of age, a native of Wales and pastor of the Moriah Welsh Calvinist Methodist Church of Utica, N. Y., died on August 8th of exhaustion following a fast of forty-eight days, undertaken in the hope of curing himself of chronic intestinal catarrh, a disease of which his father is said to have died. After the first two weeks he had no desire for food, but he lost thirty-six pounds and his strength gradually failed.

Death of I. C. Schureman, M.D. — Dr. I. C. Schureman, who had practised in Toms River, N. J., for thirty years, died at his home in that place on August 6th. He was fifty-nine years of age, and was an army surgeon in the latter part of the Civil War.

ARMY NOTES.

The Mortality in the Army. — The records of the Adjutant-General's Office show that between May, 1898, and June 30, 1899, the mortality in the army from all causes was 6,605, of whom 5,907 died of disease. The deaths from disease in the United States were 4,091. In Manila and the Philippines, where active field operations have been carried on almost constantly, the mortality from disease, with an average strength of about 24,000, was 380.

Strength of the Medical Corps in the Philippines. — The present strength of the medical and hospital corps *personnel* now in the Philippines or under orders to proceed thereto includes 227 medical officers, 1,175 members of the hospital corps and 27 female nurses. The number of the latter is to be increased at an early date, there being altogether about 200 in the service. To this strength must be added a varying number of Chinese coolies, who do nearly all the work as litter bearers as well as the heavier labor about the hospitals.

Miscellany.

SUMMER MORTALITY IN NEW YORK.

The summer mortality in the city this season compares favorably with that in past years. The deaths reported in four weeks in July represented an annual death-rate of 22.73+, against 17.98+ for four weeks in June, and 17.55+ for four weeks in May. The maximum death-rate, 24.28, was reached during the week ending July 15th, and this period of highest mortality is exactly in accordance with the average figures for many years. The lowest death-rate reported for many months was in the week ending June 17th, namely, 15.73. Excluding the week ending on the 10th, when the rate ran up to 21.49, the average death-rate for June was only 16.81. The mortality from sunstroke has been unusually low this year. Excluding the weeks ending June 10th and 17th, when the deaths from this cause numbered 85 and 30 respectively, the weekly average since the first of June has been 2.66, and in several weeks there has been but a single death from sunstroke. Notwithstanding the intense heat of the earlier portion of June, the mortality from diarrheal diseases was very much greater in July than in that month. For four weeks in June the weekly average of deaths was 67.5, and in children under five years of age, 64.25; while for four weeks of July the weekly average was 316.75, and in children under five, 294.25.

Deaths from small-pox have of late years been very rare in New York, but during the week ending May 27th three were reported, and in the month of June there were nine fatal cases. In July, however, there was but a single death. The weekly average of deaths from diphtheria in July was 35, against 36 in June, and 27.5 in May; from scarlet fever, 7.75, against 15 in June and 13.5 in May; from measles, 11.25, against 19.25 in June, and 16.5 in May. Rather curiously, the mortality from pulmonary tuberculosis was somewhat greater in July than in June, the weekly average of deaths being 149, against 134.5 in June, and 158.75 in May. In pneumonia, however, there has been a progressive decrease in the number of deaths as the summer advanced, the weekly average being 171 in May, 128.25 in June, and 102.5 in July.

THE INTERNATIONAL CONFERENCE FOR PROPHYLAXIS OF SYPHILIS AND VENEREAL DISEASES.

We have received from Dr. Isadore Dyer, of New Orleans, who has been delegated by this Conference to investigate the conditions of prostitution in the United States, a letter calling attention to this important meeting, to be held in Brussels, September 4th and following days. Papers are to be read by Drs. Fournier, of Paris; Neisser, of Breslau; Lassar, of Berlin; Finger, of Vienna; and by a number of others prominent as students of those questions. The committee has indicated the following as delegated to investigate conditions of prostitution in their respective countries:

Argentine Republic, Dr. Baldomero-Sommer, of Buenos Ayres; Austria, Dr. Finger, Vienna; Belgium, Drs. Bayet and J. Verhoogen, Brussels; Bosnia, Dr. Gluck, Savajevo; Chili, Dr. Valdes-Morel,

Santiago; Denmark, Dr. Ehlers, Copenhagen; England, Dr. Geo. Ogilvie and Dr. Drysdale, London; France, Dr. Ozenne and Dr. Julien, Paris; Germany, Drs. Blaschko, Berlin, and Neisser, Breslau; Hungary, Dr. Rona, Budapest; Holland, Dr. Selhorst, The Hague; Italy, Dr. Tommasoli, Palermo, and Dr. Bertavelli, Milau; Norway, Dr. Axel-Holst, Christiania; Roumania, Dr. Petrini de Gakatz, Bucharest; Russia, Dr. Petersen, St. Petersburg; Sweden, Dr. Welander, Stockholm; Switzerland, Drs. Jodassohn and Schmid, of Berne; Turkey, Dr. Von Duhring and Dr. Zotos, Constantinople; United States, Dr. Isadore Dyer, New Orleans.

With a view to making some presentations as to the conditions of prostitution and venereal diseases in the United States Dr. Dyer has sent out a list of questions calculated to elicit the desired information to every city in the United States of 20,000 or more inhabitants.

SMALL-POX IN GERMANY.

THE antivaccinationists will find food for thought if they will investigate the latest reports concerning small-pox in Germany during the last decade and a half. For the ten years previous to 1895 the average death-rate from small pox was 116, the greater of the total number occurring in the early period of the decade. In 1895 there were 27 deaths, in 1896, 10, and in 1897, 5. In Germany the law requires vaccination and revaccination, and the law is carried out. In no other country is the value of vaccination more evident than in Germany, and in no other country is the preventive method more thoroughly carried out. — *Journal of the American Medical Association.*

JOHN HENRY GILBERT, M.D.

RESOLUTIONS OF THE NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.

THE fellows of the Norfolk South District Medical Society have received with the deepest sorrow the announcement of the death of their beloved and honored associate, Dr. John Henry Gilbert, of Quincy, who died on August 2, 1899.

In his death this Society has sustained the loss of an ardent fellow-worker, a consistent member of the medical profession and a skilful physician and surgeon.

He was a faithful attendant at the meetings of the Society, and in its deliberations exhibited a mind well informed in the most advanced thought of medical science.

He filled the office of Censor-Councillor and President with ability, zeal and faithfulness, and endeared himself to all the members by his kindly disposition, courteous manner, upright conduct in medical ethics, and friendly interest in the welfare and success of his fellow-physician.

His reputation was not confined to the city of Quincy, but throughout the State he was recognized by his professional brethren as an honored and honorable physician, who in accuracy of diagnosis, clearness of statement and judicious treatment was surpassed by none.

The memory of his pure life and devotion to the profession which he loved and honored will remain as a blessed heritage and an incentive to noble work by his associates in this Society.

The fellows of this Society tender to his bereaved family their sincere sympathy in this hour of deep affliction and loss.

Resolved, That this memorial be entered upon the records of the Society, and a copy of the same be forwarded to the family of our associate, and also to the Quincy papers and the *Boston Medical and Surgical Journal* for publication.

E. G. TINKHAM, M.D., *President*,
JOHN F. WELCH, M.D., *Secretary*.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 5, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1245	600	20.98	9.76	14.40	1.20	1.84
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,940,226	428	167	21.61	10.35	14.72	2.30	4.45
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	218	102	21.38	10.07	20.14	1.06	3.18
Baltimore	506,389	226	105	32.68	8.16	28.87	1.72	.86
Cincinnati	405,000	103	—	10.78	7.84	7.84	1.96	.98
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	104	35	20.19	11.64	14.55	5.82	3.54
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	67	27	38.12	5.92	25.16	1.48	—
Nashville	87,754	37	14	—	13.51	—	—	—
Charleston	65,165	53	26	24.44	1.88	22.56	1.88	—
Worcester	108,240	50	22	36.00	6.00	28.00	4.00	—
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89,724	29	19	41.40	—	27.60	3.45	—
Lowell	88,641	29	24	36.72	9.13	36.72	—	—
Lynn	68,763	31	—	26.76	—	26.76	—	—
New Bedford	68,340	34	21	38.22	5.88	35.28	2.94	—
Somerville	68,101	15	4	26.66	13.33	13.33	6.66	—
Lawrence	57,263	14	8	42.84	14.28	42.84	—	—
Springfield	56,501	10	4	40.00	20.00	40.00	—	—
Holyoke	43,424	4	3	75.00	—	75.00	—	—
Brockton	37,278	7	2	28.56	14.28	—	—	—
Salem	36,883	25	17	48.00	4.00	48.00	—	—
Malden	34,613	12	6	—	25.00	—	—	—
Chelsea	33,468	12	9	16.66	—	—	—	—
Haverhill	32,022	11	7	45.45	—	36.36	—	—
Gloucester	30,589	4	2	—	—	—	—	—
Newton	29,716	10	3	—	10.00	—	—	—
Fitchburg	29,438	15	10	59.99	6.66	46.66	6.66	6.66
Taunton	28,167	15	5	26.66	6.66	20.00	6.66	—
Everett	28,338	—	—	—	—	—	—	—
Quincy	23,549	14	9	49.98	—	35.70	—	—
Pittsfield	22,643	11	4	36.36	18.18	27.27	—	—
Waltham	22,296	3	2	33.33	33.33	33.33	—	—
North Adams	20,971	4	3	75.00	25.00	75.00	—	—
Chicopee	17,842	6	3	16.66	16.66	16.66	—	—
Medford	16,511	6	4	50.00	16.66	50.00	—	—
Newburyport	14,915	3	2	—	—	—	—	—
Melrose	14,032	4	3	25.00	—	—	—	—

Deaths reported 2,890; under five years of age 1,280; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 696, consumption 256, acute lung diseases 144, diarrheal diseases 517, diphtheria and croup 53, typhoid fever 48, cerebro-spinal meningitis 26, whooping-cough 22, scarlet fever 12, measles 10, erysipelas 9.

From cerebro-spinal meningitis New York 11, Boston, Baltimore, Washington, Worcester and Chelsea 2 each, Cambridge, Somerville, Brockton, Quincy and Pittsfield 1 each. From whooping-cough New York 15, Philadelphia, Boston and Cambridge 2 each. From scarlet fever New York and Philadelphia 5 each, Boston 2. From measles New York 8, Providence and Melrose 1 each. From erysipelas New York 5, Philadelphia and Boston 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,406, for the week ending July 29th, the death-rate was 20.7. Deaths reported 4,629; acute diseases of the respiratory organs (London) 169, diarrhœa 807, measles 119 diphtheria 76, whooping-cough 60, fever 26, scarlet fever 23, small-pox (Hull) 2.

The death-rates ranged from 11.5 in Cardiff to 29.7 in Liverpool; Birmingham 21.1, Bradford 16.3, Bristol 13.6, Gateshead 13.7, Hull 18.7, Leeds 21.2, London 21.6, Manchester 24.1, Newcastle-on-Tyne 14.8, Nottingham 20.9, Portsmouth 19.7, Salford 25.3, Sheffield 27.6, Swansea 15.6, West Ham 25.2.

METEOROLOGICAL RECORD

For the week ending August 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...30	29.75	72	80	63	91	45	68	W.	W.	9	11	O.	C.	.04
M..31	29.90	68	79	58	54	56	55	N.W.	E.	9	6	C.	C.	
T...1	30.06	73	84	62	56	49	52	S.W.	S.W.	6	4	O.	C.	
W...2	30.01	76	85	66	68	73	70	W.	S.	1	12	F.	F.	
T...3	29.92	69	73	63	96	90	93	S.E.	S.E.	5	4	C.	F.	
F...4	29.89	70	77	63	92	74	83	E.	S.	6	11	O.	C.	
S...5	29.79	78	89	68	86	55	70	S.W.	W.	12	8	O.	O.	.10

* O, cloudy; C., clear; F., fair; G., fog; H., hazy; S. smoky; R., rain; T., threatening; N, snow. † Ind cates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 12, 1899.

J. R. WAGGENER, medical inspector, promoted to medical inspector from April 9, 1899.

T. H. STREETS, medical inspector, promoted to medical inspector from April 16, 1899.

T. A. BERRYHILL, surgeon, promoted to surgeon from April 9, 1899.

E. P. STONE, surgeon, promoted to surgeon from April 16, 1899.

J. M. MOORE, passed assistant surgeon, ordered to the "Vermont," August 10th.

B. L. WRIGHT, assistant surgeon, detached from the "Vermont" and ordered to duty with the 2d Marine Battalion for Manila, P. I., and on arrival at Manila to report to the commander-in-chief of the Asiatic Station for duty.

W. F. ARNOLD, passed assistant surgeon, granted extension of sick leave for a month.

G. PICKRELL, passed assistant surgeon, authorized to drop middle initial of name. Detached from the "Baltimore" and ordered to the "Monterey" and to the Cavite Naval Station.

H. H. HAAS, assistant surgeon, detached from the "Oregon" and ordered to the Naval Hospital, Yokohama, Japan, for treatment.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING AUGUST 10, 1899.

WASDIN, EUGENE, surgeon. To proceed to National Soldiers' Home, Va., for special temporary duty. July 29, 1899.

MAGRUDER, G. M., passed assistant surgeon. To proceed to Hampton, Va., for special temporary duty, reporting at the Bureau en route. July 31, 1899. So much of Bureau order of July 31, 1899, directing Passed Assistant Surgeon Magruder to proceed to Hampton, Va., revoked, and directed to proceed to Richmond and Newport News, Va., for special temporary duty. August 3, 1899.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Hampton, Va., and report to Surgeon J. H. WHITE for special temporary duty. July 30, 1899.

SMITH, A. C., passed assistant surgeon. Leave of absence granted by Bureau letter of June 20, 1899, revoked and directed to rejoin station at Norfolk, Va. July 31, 1899.

STIMPSON, W. G., passed assistant surgeon. To proceed to Fort Monroe, Va., for special temporary duty, reporting at Bureau en route. August 1, 1899. So much of Bureau order of July 31, 1899, directing Passed Assistant Surgeon Stimpson to proceed to Fort Monroe, Va., revoked, and directed to proceed to Newport News, Va., and report by wire to Surgeon J. H. WHITE, Hampton, Va., for orders. August 3, 1899.

BLUE, RUPERT, passed assistant surgeon. To proceed to Columbus City, Washington, for special temporary duty. August 3, 1899.

SPRAGUE, E. K., passed assistant surgeon. Leave of absence granted by Bureau letter of July 27, 1899, revoked. July 31, 1899.

WICKES, W. H., passed assistant surgeon. Leave of absence granted by Bureau letter of July 27, 1899, revoked. July 31, 1899.

VON EZDORF, R. H., assistant surgeon. To report to Surgeon J. H. WHITE, at Hampton, Va., for special temporary duty. July 31, 1899.

FRICKS, L. D., assistant surgeon. Relieved from duty at the South Atlantic Quarantine Station and directed to proceed to Hampton, Va., and report by wire for further orders. August 1, 1899.

THORNBURY, F. J., assistant surgeon. To proceed to Cleveland, Ohio, for temporary duty. July 28, 1899. Bureau order of July 28, 1899, directing Assistant Surgeon Thornbury to proceed to Cleveland, Ohio, for temporary duty revoked. July 31, 1899. Relieved from duty at New York, N. Y., and directed to proceed to Baltimore, Md., and report to the commanding officer for duty and assignment to quarters. August 1, 1899.

BEAN, L. C., acting assistant surgeon. Granted leave of absence for fourteen days from August 4, 1899. August 3, 1899.

GIBSON, L. P., acting assistant surgeon. Granted leave of absence for ten days. July 29, 1899.

MCGINNIS, R. H., acting assistant surgeon. Granted leave of absence for three weeks from August 7, 1899. July 28, 1899.

MARTIN, H. McD., acting assistant surgeon. Granted leave of absence for thirty days on account of sickness. August 2, 1899.

SMITH, A. W., acting assistant surgeon. To proceed to Fortress Monroe, Va., and report to Surgeon W. J. PETTUS, for special temporary duty. August 1, 1899.

RODMAN, JOHN C., sanitary inspector. Granted leave of absence for four days. August 1, 1899.

KOLB, W. W., hospital steward. To proceed to Hampton, Va., and report to Surgeon J. H. WHITE for special temporary duty. August 1, 1899.

PECK, F. H., hospital steward. To proceed to Fortress Monroe, Va., and report to Surgeon W. J. PETTUS for special temporary duty. August 2, 1899.

DAVIS, H. E., hospital steward. To proceed to Baltimore, Md., and report to commanding officer for temporary duty. August 2, 1899.

OLSEN, E. T., temporary hospital steward. Relieved from duty at Chicago, Ill., and directed to proceed to Wilmington, N. C., and report to commanding officer for duty and assignment to quarters. August 2, 1899.

BROOKS, S. D., surgeon. To proceed to Augusta, Maine, for special temporary duty. August 5, 1899.

BLUE, RUPERT, passed assistant surgeon. To proceed to Columbia, Washington, for special temporary duty. August 6, 1899.

FRICKS, L. D., assistant surgeon. To report to Passed Assistant Surgeon A. C. SMITH for duty. August 5, 1899.

TODT, W. C., acting assistant surgeon. Granted leave of absence for seven days. August 6, 1899.

RICHARDSON, S. W., hospital steward. To report at Washington, D. C., for assignment to special temporary duty. August 5, 1899. To proceed to Norfolk, Virginia, and report to Passed Assistant Surgeon A. C. SMITH for temporary duty. August 7, 1899.

GIBSON, FRANK L., hospital steward. Relieved from duty at the Delaware Breakwater Quarantine Station and directed to report at Washington, D. C., for temporary duty. August 9, 1899.

COMFORT, N. C., hospital steward. To proceed to Hampton, Virginia, and report to Surgeon J. H. WHITE for temporary duty. August 8, 1899.

RESIGNATION.

DE KRAFFT, S. C., acting assistant surgeon. Resignation accepted to take effect July 15, 1899. July 26, 1899.

APPOINTMENTS.

B. W. GOLDSBOROUGH, of Maryland, appointed acting assistant surgeon, U. S. Marine-Hospital Service, for duty at Cambridge, Md.

EGIL T. OLSEN, temporary junior hospital steward, appointed junior hospital steward from May 29, 1899. August 3, 1899.

CHARLES A. WARHANIK, of Illinois, to be junior hospital steward. August 5, 1899.

PROMOTIONS.

G. M. MAGRUDER, passed assistant surgeon, commissioned as surgeon. August 5, 1899.

J. J. KINYOUN, passed assistant surgeon, commissioned as surgeon. August 5, 1899.

RECENT DEATH.

LAWRENCE GRAFTON KEMBLE, M.D., M.M.S.S., of Salem, died August 7, 1899, aged thirty-seven years.

Address.

ADDRESS IN SURGERY.[1]

BY ALEXANDER OGSTON, M.D.,
Surgeon-in-Ordinary to Her Majesty the Queen in Scotland; Regius Professor of Surgery, University of Aberdeen.

(Concluded from No. 7, p. 151.)

In all that pertains to surgical work, it will not be questioned by those aware of what is now required, that our military and naval surgeons have, in peace, virtually no training to fit them for what they may at any instant be called upon to undertake in war. Who that compares the conditions under which the civil surgeon is formed with those existing in the Royal Army Medical Corps or the navy will be so bold as to say that the latter furnish any adequate means of familiarizing their surgeons with the highly complicated and difficult procedures which they ought to be able to carry out with dexterity and success? Save a few connected with Netley — and perhaps Haslar — Hospitals, most officers have hardly once in their lives an opportunity of carrying out an important operation on the brain, thorax, or abdomen. How, then, can they undertake, with any prospect of a happy issue, the intricate steps of, say, a laparotomy in a gunshot wound of the abdominal contents, with all its complicated problems and perils? Under the existing system no junior officer of the Royal Army Medical Corps has any opportunity of practising modern surgery; even if an occasion offers, he is tied down by restrictions and impediments enforced by his seniors, and his natural desire to prepare himself for the highest work is disregarded and repressed, so that few, if any, are capable of the class of surgical work which will be expected of them by the country, and for the non-performance of which they will be unjustly blamed when the test of war is imposed upon their performances. So long as the medical services afford their surgeons no proper facilities for acquiring and maintaining a competent knowledge of these highly-important and necessary matters; so long as the junior medical officers have neither the chance nor the encouragement to perfect themselves in their science, and especially in what would lie before them in the event of a war, it can hardly be wondered at that a service entailing on those who enter it what is, from a professional point of view, almost an intellectual sterility, should be a mode of life our best graduates recoil from, and which few of them can be persuaded to adopt.

THE WANT OF ADEQUATE TRAINING.

Moreover, the destitution of the army and navy of institutions where surgery can be practised is very great. Netley Hospital, limited as it is to the treatment of soldiers, and Haslar to that of sailors, do not offer such varied material as is required by surgeons and physicians to cultivate the practical branches of their art. And there is an almost total absence of hospitals and lazarettos throughout the stations where medical officers are serving of a kind fitted to afford them any of the facilities they have a right to expect. The provision of places of study and practice is imperatively called for, where the younger and middle-aged officers, provided with all the appliances found in civil institutions, and with every class of patients on whom they may be used, may fit themselves for their duties of attending the wounded during action or in field or base hospitals. And until such provision is made, we may be assured the services will not secure the number and quality of officers they require; for graduates will not nowadays, after being fashioned by years of high mental training, consent to exchange an intellectual profession for a life of stagnation. The services must either adapt themselves to the altered spirit of the times, or remain undermanned and officered by a class of graduates inferior to those who would otherwise enter them.

Had custom not dimmed our eyes, the position of matters in the army and navy would ere now have excited indignant surprise. While the calls of modern science have been heard in the surgery and medicine of civil life, and effected the changes to which I have alluded, and while they have been taken to heart in the medical services of foreign armies and navies, they have fallen on unheeding ears among those responsible for the efficiency of our own. The contrast between the medical and other departments makes the matter more astonishing. Such scientific corps as, for instance, artillery, engineering, and telegraphy have undergone extensive improvements and reforms in the last few decades. No means of enhancing their efficiency is neglected. For them all the inventions of modern science are studied, adopted, and improved. Elaborate care is taken that every one whose duties in war time will necessitate his familiarity with appliances or knowledge of any kind is trained in them, so that when the call of war is heard, perfect efficiency shall have been attained. The lives of the officers and men of the navy, of the royal engineers and artillery, of the cavalry and infantry, are devoted to the daily acquirement of a knowledge of and familiarity with what they must use in war, attainable only by constant practice under conditions resembling as nearly as may be those of a real campaign. Tactics are studied, manœuvres held, officers and men practised and drilled, fleets and bodies of men are put in motion, and any unreadiness is observed and remedied. Yet the Royal Army Medical Corps and the Naval Medical Service, which demands an even higher and more varied culture, a more profound knowledge, and a greater degree of practice and experience than either artillery or engineering ere their delicate machinery can be brought into salutary use, are left in a condition which may have answered well enough fifty years ago, when rough-and-ready surgeons could do the rough-and-ready work then required, but which is out of harmony with the revolutionized conditions of modern surgery and the state of the medical service of the armies and navies of rival military powers. Even the care that has been bestowed on the development of ambulance will only result in wounded men being now brought, on the best surgical principles, to surgeons rendered as unfit to treat them as it is possible for a bad system to make them.

CAUSES OF DISCONTENT IN THE SERVICES.

The present system has had a sufficient trial, and, in spite of all attempts to amend it, has yielded unsatisfactory results, mainly owing to the deficiencies indicated. The Royal Army Medical Corps and Navy

[1] Read at the annual meeting of the British Medical Association at Portsmouth, August, 1899. - Abstract from advanced proof-sheets sent by the courtesy of the editor of the British Medical Journal.

Medical Department, indeed, are at present existing under impossible conditions; they cannot be subjected to such impediments without their effects being felt in a hundred ways. They are in a state of internal discontent from the consciousness of being seriously defective somewhere. Their members realize that they do not possess the same privileges of professional occupation as their civil *confrères*, and are sensible that they are not equipped as they ought to be in following out the intellectual problems to which they have dedicated their lives. This is perceived not only by themselves but by others, especially by the other scientific branches, and naturally they do not enjoy the same appreciative esteem as is accorded to departments engaged in the constant healthful exercise of all their due activity, and possessing the internal vitality and self-respect resulting from conscious advance in the exhilarating race of intellectual progress which forms the very life of the leading professions in the world's foremost nations. It is certain, too, that the same cause underlies what has often been complained of, namely, the cold regard paid by the military and naval authorities to the medical services, their lack of appreciation of them, the way in which they are starved in their pecuniary requirements, and the fashion in which their exercise and training during peace are overlooked and neglected. They would seem to be considered as less deserving of development than even such departments as the commissariat and transport — the contemptuous belief being apparently held that trained surgeons to attend the wounded in war can be summoned into the field at a moment's notice by the expenditure of so much money, like the horses, mules and camels that an army requires.

THE ARMY MEDICAL SERVICE UNDERMANNED.

This condition of things is one from which there must some day be a rude awakening. It may be true that in former days an army medical service could be so extemporized, but it is so no longer. The Army Medical Corps ought to be made, what it at present is not, a complete and perfect entity, fully equipped with everything needful, and regularly trained like any other department. If it is to furnish the priceless service for which it exists, it must be fully manned, the members composing each of its units must be accustomed to work together, so that their duties are familiar and can be promptly performed, and the whole of its equipment must be prepared in time of peace for instant employment in war. Instead of this we have a department so starved and undermanned that, as the Under Secretary for War recently admitted, in the event of a war breaking out requiring the employment of two army corps, we could not supply them with the requisite medical contingent.

So complex an organization as the Royal Army Medical Corps ought to be kept in a high state of efficiency, and be vitalized by continual practice. It ought to consist of separate units, each complete in itself and familiar with its equipment and work. Each field hospital should be completely furnished and frequently practised in its duties. Every corps should be ready to act, as in other departments, the moment it takes the field, and not have to learn its duties there when the day of trial comes in a campaign. Whether stationed at home or abroad, the officers should be provided with all the proper means of keeping themselves informed regarding the advances that are for ever being introduced into their science. The literature bearing on every new progress should be supplied to them at remote stations where scientific periodicals and books are not found; for no medical officer can, from his pay, purchase and transport a library of the newest medical works, even if he were aware, which he often cannot be, of what he ought to procure. The want of all these things prevents the due development of the services, and there can be no reasonable hope of a better state of matters until they are remedied. But were the reforms that naturally suggest themselves carried out, who can hesitate to believe that new life would be infused into them? The best graduates would once more flock to and remain in them; and the country would not be placed in the dreadful position of having to pay with the lives of its bravest and best for the state into which its medical services have been allowed to drift.

THE INDIAN MEDICAL SERVICE.

It is not necessary to enter into many details concerning the Indian Medical Service. To some extent it shares in the defects of the Queen's; but opportunities of professional work are more frequent, two-thirds of its officers being engaged in civil work; and it therefore affords a professional training that places it in a much better position, and approximates it in some degree to the condition of Continental army medical services. Its comparative popularity is a strong corroboration of the remarks I have just made, for it attracts the best graduates of our medical schools, so that the weakest men who enter its ranks are of a class superior to the best who enter the Royal Army Medical Corps.

THE MEDICAL DEPARTMENT OF THE NAVY.

The medical department of the navy, on which I have already partly touched, has no more than the army kept pace with the advance of the times; it still preserves an organization that may have answered its purpose well enough in the first half of the present century, but is inadequate to meet the requirements of to-day.

In it, as in the army, the fundamental error is perpetuated of adhering to a system whereby its officers, shut out from practising their profession as civil surgeons have to do, fall year by year more out of touch with the advancing requirements of science, and necessarily fail to familiarize themselves with what will be their great duties in the event of a naval war. Treating none but the healthy and strong in time of peace, their opportunities of dealing with wounds, and especially with the higher branches of surgery, are as good as non-existent; and they cannot by any possibility, as things are, acquire the skill everywhere possessed by surgeons engaged in civil work, but which would in war be equally demanded of them. Such as it is, their work has to be carried out under arrangements that seem deliberately calculated to render the practice of antiseptic or aseptic surgery impossible in rooms without antiseptic materials, irrigators, or sterilizers, and with a limited armamentarium of instruments provided, even at the present time, at their own expense. Proper diagnostic instruments and apparatus do not exist among them; even the surgeons in the best equipped vessels and stations are left destitute of the facilities that are wanting in

hardly a single civil hospital or dispensary for the poor throughout the length and breadth of the land.

Nearly all that has already been stated regarding the Royal Army Medical Corps is at least equally true of the Naval Medical Service; but to enter *seriatim* into these matters again would be an unjustifiable waste of time. More than the army the navy requires the touch of a reformer's hand. I should be sorry to use any word that may give needless offence, but I am forced to say that even on board the most modern ships of war a comparison of their surgical outfit and arrangements with the varied armamentarium and the conditions of work of the civil surgeon tends to evoke a vision of the knight of La Mancha equipped in his great-great-grandfather's suit of armor.

When we consider what the medical officers of the navy may at any moment be called upon to do, and their vast importance to the country, we feel that they, of all others, ought to be almost lavishly supplied with the best facilities for work, with instruments and apparatus of all kinds, instruments for special diagnosis, instruments for special operative procedures, endoscopes, electrical instruments, radioscopic apparatus, sterilizers, and apartments where antiseptic and aseptic surgery can be practised, and have reasonable opportunity in time of peace of familiarizing themselves with their use. The highest care should be bestowed on fostering the British of all the naval medical services in the world, and we can scarcely believe that this is not done.

THE WOUNDED IN NAVAL WARFARE.

In the event of a naval engagement of any magnitude the wounded on board our ships of war would have to be attended to in a small dark room, unprovided with any save the rudest appliances and a few cots, where at most half a dozen men could be handled, and which is moreover in many vessels as much exposed as any other part of the ship to the fire of the enemy. Were such a fighting-bay rendered untenable, the wounded, however great their need, could be attended to only by being lowered, slung in a vertical posture, down the narrow hatchways, where the shot is brought up from the magazines to the guns, and even these would not be available during the heat of an action. Everything on board ship that can destroy life is in the highest perfection, everything that can save it is of the rudest description and behind the age. In the case of a gunshot wound through the abdomen the only chance of recovery is laparotomy performed within twelve hours, but on board none of Her Majesty's fleet is there any possibility of performing such an operation; there are neither accommodation, instruments, nor accessories. Or were 20 per cent. of the men of one of her battleships or cruisers killed and disabled in action, the wounded among them could not, in the present state of things, receive the attention that ought to be given them.

Yet there is no reason why the constructors of the navy should not arrange under the water line, shielded from the enemy's fire by the turtle-back armor-deck of the vessel, a sufficiently large and well-lit space, fitted with all that is required for wounds, compound fractures, and operations on the main cavities of the body. Into these the wounded could be lowered through hatchways made capable of transmitting men on stretchers or litters even in the midst of an engagement, so that all emergency operations could be satisfactorily performed.

Matters are even worse on board the smaller vessels, which have no surgeon and few surgical appliances. On torpedo-boat destroyers there are no materials for making splints, only a box of antiquated remedies like those supplied in the vessels of the mercantile marine, where the sailing-master acts as the doctor. It would not sensibly retard the speed of such a boat to carry a surgeon,— or at least several men specially and fully instructed in first aid, and really capable of efficiently affording it,— and to furnish such appliances as would enable them to deal with wounds and compound fractures.

The requirements of naval warfare must always, more or less, impede the carrying on of surgical work on shipboard during naval actions. No person will impugn the principle that the efficiency of war vessels as fighting machines has first to be considered, and as much accommodation as possible allotted to their fighting armanent. It is inevitable that this should be the chief consideration in fitting out the navy. To keep the communicating doors of water-tight sections open during action, in order to convey the wounded to the surgeons, might cost the lives of all on board. It may also be that in naval warfare, especially in some vessels, success may occasionally best be purchased by throwing aside for the time being all considerations of dealing with the wounded. But the principle may be, and is being, carried too far; for it is a duty to see that, short of interfering with the perfection of the fighting machine, no suffering is left unrelieved or life needlessly sacrificed, and no means neglected of bringing wounded men the earliest and best attention that can be given. No questions of economy should be allowed to prevent officers and sailors wounded in naval warfare receiving such early and effectual help as their condition so urgently demands. The cost of a couple of twelve-pounder guns would probably cover all that is required for each ship. We must lead rather than follow in all naval matters, as foreign ships of war are constructed according to the example England sets. And our navy, being the most perfect and greatest destroying force of all the war-fleets of the world, we should be the foremost in introducing into it the best-planned methods of relieving suffering and saving life that can be devised.

LINES OF REMEDY.

Criticisms without suggestions are usually better unmade, and to call attention to defects in the services without indicating the lines of remedy would be almost unpatriotic. I have already ventured to some extent to indicate how I think defects may be made good, though some of the suggestions have been more of detail than principle. It would be out of place to dwell at length upon minor suggestions, but it may now be desirable to state generally the lines on which the services can be brought into harmony with the requirements of modern science, so as to insure the wounded in war the most enlightened treatment, and for the medical officers the means and training for carrying on their work in a manner that will bear comparison with that of their civil compeers.

It would be easier to do if we possessed universal military service, as we might then look for guidance from Continental examples. In countries where this

obtains, the most eminent civil surgeons are at the disposal of the authorities in time of war, and in peace hold rank in the army, receiving promotion like those actively serving. They are soldiers in reserve, and can be made use of wherever their eminence and special qualifications make them most useful in war. The idea of adopting this system among ourselves, but on voluntary lines, is no new one; although it has recently been brought prominently into notice by Lord Lansdowne's creation of the Central British Red Cross Committee. If the committee make an endeavor to attach a number of our most capable civil surgeons to the Royal Army Medical Corps, by conferring on them military rank and titles, with special privileges and emoluments, on condition that their services be at the disposal of Government in time of war, some good may be done. There are obvious difficulties, but they do not seem altogether insuperable, and, at any rate, such a plan is worthy of the attention of the War Office. But anything short of this, as, for instance, the old desultory method of inviting civil practitioners to volunteer their aid when war breaks out, and so supply the defects of the service, is doomed to failure; because, though capable young graduates are thus obtainable in considerable numbers, they are not the class of experienced surgeons who are wanted; they cannot replace the military or naval medical officers, and are at best but a species of superior dressers. Few, if any, of the men who would be of real value will come forward, save perhaps in the event of an impending national calamity. The system was tried in the Crimea, and has since occasionally been carried out by the National Aid Society, but I am sure those who have seen it in operation must admit that it is at least a comparative failure.

Neither of these methods, nor indeed any other, will, however, compensate for an inefficient army or navy medical service, and should the War Office or Admiralty be induced by any such expectation to defer the necessary improvements in their medical departments, they will find when the day of trial comes that they have made a fatal mistake. But I shall have to return to this question farther on.

MEDICAL SERVICES OF GERMANY.

Although the arrangements of foreign services cannot be directly adopted in our own, they may teach us how to improve them, for we find most of them imbued with a recognition of the altered conditions of the surgery and medicine of to-day, and making progress in adapting themselves to these changes in a fashion that is not found among ourselves. Much that is instructive may be learned from the medical services of Germany, where, of course, compulsory service exists. In that empire every medical man who has served possesses a fixed military rank, even if engaged in civil practice, and is liable to be called upon to serve where and when required. Those who have not served in the regular army but are in private practice receive annually an inquiry addressed to them by the War Office as to whether they are prepared to serve their fatherland in case of war. Every German medical man who has served in the army at all is maintained for nineteen years under military orders — that is, he possesses a fixed rank, and is allotted, even in time of peace, a known military post which he would occupy if war broke out. Thus the university professors hold high military rank, corresponding with their eminent civil position and scientific attainments, and are required to give annual courses of instruction to the medical officers serving in the army or navy. Such well-known surgeons as Bergmann, Bruns, Trendelenburg and Mikulicz have to teach these classes during the Easter holidays, so as not to interfere with the winter and summer sessions of the universities. Each professor has his fixed military rank assigned to him in case of war; most of them rank as lieutenant-generals, some as generals, and even higher, and in the event of war they act as consulting surgeons to the medical officers of the army in the field or base hospitals. They receive the same pay as the military surgeons, as do also the other surgeons who are liable to be called out in case of war; and some of the latter have places assigned them in the sanitary corps, etc., so that their skill and experience are utilized in every department of the service.

In time of peace German army surgeons have the development of their professional culture ensured by the following measures: The most promising surgeons and assistant surgeons are sent to do duty for a year at a time in the medical, surgical and gynecological departments of the hospitals connected with the universities, and in other large public hospitals unconnected with them. The junior and assistant surgeons are also annually sent to attend the special courses of instruction in anatomy, surgery and operative surgery mentioned above. The senior medical officers nearly corresponding with our surgeons-major, at least the most competent and promising of them, have to serve in rotation in the large military hospitals, in which are treated not merely soldiers but all kinds of ordinary patients; there they have to act as teachers and attend and take a share of the tutorial work among the pupils in the classes of the various professors; or they may be sent to do duty for a year in the general hospitals, not only in the surgical but also in the medical and gynecological wards. They have also to attend, as they may be ordered, annual courses of bacteriology; or they may be furnished with funds for travelling in other countries and studying their medical and sanitation arrangements.

All surgical instruments and appliances in the German army are provided by the State, and in their navy this is likewise the case; every hospital in which the medical officers serve has its complete armamentarium provided for it, so that no unwise economy hampers the most thorough and modern practice of the healing art; and the same thing is true in regard to their naval medical service.

MEDICAL SERVICES OF RUSSIA.

In the Russian army and navy similar care is taken of the professional culture of the medical officers. Russia possesses 6 large and 300 small hospitals connected with the army, besides smaller lazarettos; and in some of these the equipment is far in advance of anything the services possess in this country. Thus the military hospital of St. Petersburg, wherein are treated all medical, surgical, gynecological, ophthalmic and other diseases, consists of five separate clinics or infirmaries, each of which is complete in itself, and possesses departments for every class of disease, and even wards for paying patients. The wards are excellent, and replete with appliances of every kind,

and there are bandage-rooms, purifying-rooms, operation theatres, bacteriological departments, rooms for physical research, laboratories for teachers, and laboratories for students, all excellent and complete. Each clinic possesses 850 beds, 120 of which are for women's diseases, and 20 for children's; and about 45,000 patients are treated per annum. In these clinics the students and assistants have to work in the most thorough manner, and study every kind of case.

The hospital possesses a staff of 34 professors, 70 *privatim docentes* and 47 assistants. Each department is furnished with an ample annual allowance for instruments and apparatus, and can apply for and obtain additional grants for anything more that is required, or for anything new and expensive. They have liberal provision of everything calculated to assist the most advanced work and investigation: x-ray rooms, photographic-rooms, electrical-rooms, immersion lenses, centrifuges, etc., to an extent that excites the marvel and envy of British visitors. The work in the wards, such as case taking, temperature recording, and every sort of examination and study of the cases, is of the very highest character, and the operations and dressings are carried out by the surgeons and qualified assistants in a fashion that is above praise.

Russia has 3,000 surgeons in her army, and any of these may, if he show ability and powers of work, apply for and be ordered to return to study in the hospitals for a period of two years. There he has to work as a regular assistant, and on proving his capacity may attain a place among the teachers of the institution; or he may be transferred to the hospital of some provincial city, and there continue to perfect himself in his profession, and further qualify himself for his duties in time of war.

The Russian naval hospitals are arranged like their army hospitals; they exist in many parts of the empire, there being five large ones at different ports, besides one or two smaller ones; they admit civil cases of all kinds; and in them the medical officers possess opportunities of training themselves in all manner of high-class professional work. In the Russian navy the medical officers who show ability can obtain permission to return for two years to the hospitals, and can there advance by merit, ten every year, to become *privatim docentes*, and so proceed to the position of professor. And they have the same privilege as those of the army of obtaining, after ten years' service, two years of study-leave in the hospitals and schools, during which time they are granted extra pay.

The Russian State supplies its army, its navy, and their hospitals with instruments of the newest construction, embracing appliances for special diagnosis and treatment; the operation instruments, and even the boxes that contain them, are arranged so that they may be readily sterilized by heat or otherwise, and Schimmelbusch's sterilizers and apparatus specially constructed for carrying out antiseptic and aseptic treatment under the difficulties of a campaign are supplied with them. The drugs are prepared for the services in the form of tabloids, with the active principles accurately dosed and made up by the newest machinery. Dressings, bandages, and such like are prepared, sorted, made up, sterilized, and sent out from factories which are ideals of purity, ingenuity and care, in a way that is an example to the world.

MEDICAL SERVICES OF FRANCE.

In the French army, post-graduate courses expressly for medical officers are conducted by professors at the different universities throughout the Republic, and the cost is borne by the Army Medical Department; while a certain number of the medical officers of the active and reserve army are every year ordered to attend them, extra pay being drawn by those who do so.

A SCHEME OF REFORM.

But enough has been said to show that we have much to learn from foreign countries; that, unless we follow their example, our officers, soldiers, and sailors who may be wounded in war will be attended to in a very imperfect fashion compared with those of other European Powers, and that our services stand in need of great reforms, which must be more or less of the following nature.

It would, first, be a great advantage to the services were a section created for military and naval surgery at the annual meetings of this Association, in which all professional matters connected with them could be discussed, and where all communications should be privileged. There can be little doubt that the responsibility for the defects of the services chiefly lies in the apathy and ignorance of the civil part of our profession regarding them, and this is the first thing that should be remedied. Such a section would furnish instruction as to the actual state of matters and what amendments are required, and by its agency the profession and public would be educated to obtain them. Reforms so initiated and urged on the authorities by the Association could not fail to be quickly introduced. In such a section also questions of ambulance, transport, equipment, wounds, and subjects of a kindred nature would be perennially dealt with. And special work by medical officers would secure due publicity and appreciation.

Information as to the condition of the services should be laid before the War Office and Admiralty, and the necessary reforms urged upon them in all proper ways, in order that their organization and equipment may be modernized. The War Office in particular should be induced to carry into complete effect the system initiated when the regimental system was abolished. Medical provision should be made for three complete army corps. This, if it exists at present, is a mere framework on paper, of no real use in so complex a machine as the Royal Army Medical Corps. The number of those who are to serve when war breaks out should be completed; the equipment and materials should be ready and at hand, and men and officers frequently trained in their use.

Field hospitals should have their equipment complete, and their staff ought to be attached to them.

The whole service should be organized as a body of independent units, capable of acting alone or being combined or brigaded as required. Everything belonging to each unit, even to its transport, should be complete and under the command of its medical officers. This would give the military authorities a medical corps on which they could always depend, out of which they could be supplied with

such a proportion of units as the particular exigency required, to be distributed where and when they were called for. Such a system would throw responsibility for the adequacy of medical arrangements on those in command, and we should no longer have the Army Medical Corps bearing on its shoulders a vicarious load of sins whenever a general,— to use a terse vulgarism,— miscalculates the size of his butcher's bill.

INSTRUCTION OF OFFICERS.

The most clamant of all reforms is provision for the proper instruction of officers in their war duties. It is the climax of unwisdom to deny them this, and not until it is fully conceded can the services regain their lost popularity and attract such graduates as will provide the number and quality of medical officers the country requires. The principle of study-leave has been conceded, but cannot be carried out in a service too undermanned to do its work. And the amount conceded is, in my opinion, far too little to enable medical officers to keep pace with the advances of science. I cannot put too strongly the absolute necessity for at least one out of every five years of service being devoted to this. Were every meritorious officer, especially if he have been stationed abroad, set free to devote every fifth year or its equivalent during the first twenty years of his service, or up to forty-five years of age, to visiting and participating in the work of military, naval, and above all, civil hospitals and schools of medicine, much would be done to ensure his possessing the skill in the higher methods of surgery and medicine to which he and those under his charge are entitled to lay claim. In this we should be but adopting what has been found indispensable by other European Powers. Officers receiving study-leave should be sent to act as assistants, residents, and house-surgeons and physicians to our hospitals and schools of medicine, in the same way as our younger graduates who are in training for the highest places in the civil profession. Officers from the services would be cordially welcomed in such institutions, where men of their stamp are continually in demand. There exist, besides, numberless infirmaries throughout the country unconnected with schools of medicine, where most excellent surgery is being daily done, in which they would be received with open arms and welcomed to take a share in the work. It is often most pitiful to see our graduates in the services returning to the schools where they were trained, longing for and acutely feeling the need of such work and practice, who, under existing arrangements, can only hang about for a few days and look wistfully on under every discouragement of their natural aspirations, till they have to turn away, hopeless of obtaining the privilege of mixing among the workers and training themselves in the refined surgery of to-day.

DEVELOPMENT OF HOSPITALS.

It is of the most vital importance that the development of military and naval hospitals should at once receive the attention of the authorities. The services can never be what they should until their hospitals and lazarettos, both at home and abroad, are multiplied, improved, and cherished into new life and activity. They should, wherever it can by any possiblity be done, be thrown open for the reception of ordinary patients from the civil population, and for the admission of diseases of all kinds. The number of medical officers in charge of or serving in them should be largely increased, and they ought to be provided in them with fully the same opportunities as are enjoyed by their civil brethren. No more deadly injury has ever been done to the medical services than by starving and neglecting their hospitals. They are the heart of the services, and it is necessary that the authorities should be brought to recognize that this is so, and follow the wise example set by foreign nations.

HOSPITAL SHIPS.

I cannot believe it possible that the medical arrangements on board our ships of war should be permitted to continue in their present state. The succor of the wounded in a naval action is, no doubt, a question of very great difficulty on board ship, and no considerable alteration of the existing distribution of space can be claimed with any hope of its being conceded. But, without going so far as this, it is the duty of the State to provide those who shed their blood in its defence with suitable special accommodation in as safe a situation as possible, and to see that those in charge of them are furnished with every material, appliance or instrument that can lessen suffering, or confer an additional chance of saving life. Other Powers are more generous and wise, and a nation depending on its navy as we do cannot be pardoned for such suicidal economy.

New discoveries may possibly some day alter the conditions of naval warfare; but in the meantime it seems unlikely that any great change can take place in the general character of our fleets and warships, and a considerable naval action would certainly at present furnish such a mass of wounded men as might defeat the best efforts of the Naval Medical Service to cope with. The only means of doing so, and one so obvious that it is a marvel our country has not long since adopted it, is to provide every fleet with a certain proportion of fast steamers, without armor or armament, flying the Red Cross flag, fitted up with wards, operation theatres and dressing rooms, anesthetic, sterilizing and apparatus rooms, officered by a staff of surgeons and attendants, and in every way imitating the arrangements of the best civil hospitals. These should form as essential a part of every squadron as do the bearer companies and field hospitals of an army. Their duty should be to dash to the aid of ships disabled or out of action, or the moment the conflict was over; and with the help of their trained attendants and the best forms of slings, litters and barges remove the wounded to the protection of the Red Cross, and render them the same attentions as those given in like straits to the injured and wounded in the army or in civil life. The cost of such vesselswould be small compared with ships of war, and the good they would achieve in great naval engagements, and even in ordinary times, would be unspeakable.

I am glad, since this was written, to perceive that the Peace Conference at the Hague has occupied itself with this question, and is endeavoring to secure such vessels being treated as neutrals. But, even if the Conference fail to procure their neutrality, it will not make it the less our duty to provide such vessels in the navy.

CIVIL AID A BROKEN REED.

It is necessary, also, to make strenuous war on one of the most serious obstacles in the way of obtaining the reforms required for perfecting the services — namely, the tendency on the part of the military authorities to believe that deficiencies in them can at any time, by the power of money, be compensated by engaging civil aid. No more erroneous idea could possibly exist, as those who are acquainted with its working well know. The civil aid at present employed in various stations throughout the country is of an inferior quality, and could not, even such as it is, be made use of in war to any extent. The medical men who fill these substitutive posts, as well as those who would volunteer to aid in active service, are not the skilled and trained class who could be entrusted with the difficult surgery of gunshot wounds. The urgency of the situation has driven some to suggest that should need arise, the duty of attending part of the wounded and convalescents could be discharged by existing civil institutions. This could never be the case to any extent; neither their accommodation nor funds could be made applicable to such purposes, save in the event of a dangerous national crisis. The country and the heads of the services must be brought to recognize voluntary aid, even such as that proposed to be organized by the Central British Red Cross Committee, cannot provide the class of medical officers required, unless that organization were to be developed at great cost into a second army medical department, which would crush the present one out of existence without being itself fitted to take its place. The fatal error of imagining that the Army Medical Corps can be supplemented by civil aid is one that has already done infinite harm; it has been made a constant pretext for hindering the due development of the services and producing the defects of which I have spoken, and is a mischievous delusion that cannot be too strongly combated. Were such a proposal made regarding any other scientific department, such as, say, the royal engineers, its absurdity would be at once perceived; but so little is the peculiar position of military surgery known to the laity that it passes as being reasonable among many without, and some even within, the limits of the medical profession. At its best it is but a poor palliative, but can never be a cure.

FALLACIES AND FACTS.

It is conceivable that some may be found, even in the services themselves, who contend that they are not in so unsatisfactory a condition as I have painted. They can point to good work done in them but yesterday, to individuals in them whose admirable labors or brilliant achievements are well known to us all, and to evidence that special institutions or special expeditions are provided with many of the latest appliances for scientific diagnosis, treatment or research. It would be wrong to deny, or grudgingly and unfreely to admit, these facts; to overlook the enlightened, devoted and admirable work, or the talents and valor of numbers of our brethren in the services; or to minimize the efforts of those highly placed in them to maintain and elevate their standard. I should be be very sorry to seem to do so. But let those who hold that all is well with the services visit the hospitals, depots, ships and stations of the army and navy, and see with their own eyes the circumstances under which the surgeons have to work now, and would have to work in war. Let them contrast their equipment with that of our civil hospitals, even of our minor country infirmaries. Especially let them study the military and naval arrangements of other countries, and realize the full and energetic professional life enjoyed by the medical officers of the best European Powers. They will then find no escape from the conviction that our present system is most seriously at fault, and that without recognition of this and its timely amendment our country will have its eyes rudely opened when the strain of war shall arrive, and the test of facts unfolds the lamentable revelation of how unfitted the services are for their great and real work. I have given sufficing reasons why I and many civil surgeons feel unable to agree with those who take a hopeful view of the condition of the services, and have striven to show that there lies before us a struggle of no small magnitude to be gone through ere we can expect to do so.

I trust it is not necessary for me to say that, under what I have stated regarding them, there lurks no hostile undervaluing of the services, or of those who are in their ranks. I have been moved by a sincere respect for them, and regard for their interests, and by the conviction that the present is a suitable time for one in the civil part of the profession to speak boldly what is in the minds of many civil surgeons, and is known to still more who are in the services themselves. "Better are wounds from one who loves than fraudful kisses from an enemy." It has been far from my intention to reflect on the medical officers of the army and navy, numbers of whom are my own intimate and valued friends. Should I seem to have done so in any degree, then:

> **Sir, in this audience,**
> **Let my disclaiming from a purposed evil**
> **Free me so far in your most generous thoughts,**
> **That I have shot mine arrow o'er the house**
> **And hurt my brother.**

I know well that though in the services good work gets little reward, and bad work as a rule no punishishment, yet in truth there is much good work done and little bad. I have been privileged to witness those in them doing all that men can do under the most discouraging circumstances, where everything seemed to conspire against success, and have admired and wondered how well things were done. The system is at fault, not the men, and no body of men can quite overcome the impossible conditions in which the services are placed, or make bricks without straw.

But I hope my motives will not be misjudged, and that what has been said may contribute in some degree to stir the profession generally, and this powerful Association in particular, to increased efforts to open the eyes of the British nation to the real state of matters, regarding which it is at present blind; so that when the Temple of Janus once more opens in our midst, the services may be found in such a state of preparation and efficiency as is demanded by the honor and well-being of our country and the interests of humanity.

Illegitimate Births in Munich. — Of the 16,234 births in Munich last year, 28.6% were "out of wedlock." And yet the German papers glory in the fact that one-third of the births in Paris are illegitimate. — *Philadelphia Medical Journal.*

Original Articles.

POTT'S PARAPLEGIA AS AFFECTED BY THE CORRECTION OF THE SPINAL DEFORMITY: A REPORT OF CASES.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

Until the past two or three years the commonly accepted treatment of Pott's paraplegia consisted of rest in bed with as thorough fixation of the spine as was possible, together with the less common but frequent use of traction and counter traction.

The duration of the paralysis varied with the location of the disease and the age of the patient. Rarely did it disappear before six months and that in children, while in adults few recovered in less than eighteen months or two years. In a certain number of cases, even after a longer period of time, and even under the most careful treatment, the power failed to return. This has formerly been considered to be due to degeneration of the cord, and consequently it was supposed that the condition was hopeless.

Various theories have been offered in explanation of the paralysis, such as abscess; direct pressure of the softened vertebra upon the cord; pressure due to a tuberculosis of the meninges; the tubercular process extending into the cord itself, involving the interstitial tissue surrounding the nerve fibres; an edema of the cord due to imperfect circulation at the seat of the disease, and probably others which have escaped my notice or memory.

As the result of the work which has been done during the past three or four years in connection with the correction of the spinal deformities, the course of the paralysis has been changed in so striking a degree that it becomes necessary for us to reconsider some of our former views, and it may be possible by studying a group of such cases to speculate more definitely upon the exact etiology of the symptoms.

The most striking fact in treating these cases is that whatever the etiological factor may be, the correction of the spinal deformity, or only a partial correction of the deformity, has been followed by a very rapid and at times an instant relief from the paralysis. This result has been so universal in my own experience and so common in the hands of others who have pursued the same method that, while at first the disappearance of the paralysis was supposed to be only a coincidence coming in connection with the correction of the deformity, at present the correction of the deformity has come to be of secondary importance to relief of the paralysis which is to be accomplished in this way.

In my own experience of the eleven cases which have been treated in this way all have shown a marked improvement in the motor control of the legs within a few days of the time of treatment. In some of the cases, either because of the location of the disease and the inability to hold the spine in the corrected position, or because of inability to control the after-treatment, it has not been possible to make the improvement permanent, and relapse has occurred. The fact, however, that the paralysis has been relieved by the change in the position of the spine has been demonstrated, and the demonstration repeated several times in one of the cases.

Of the eleven cases, five were reported at the last meeting of this Association in the paper entitled "Forcible Straightening of Spinal Deformities resulting from Pott's Disease," and they are again mentioned because the subsequent history of the cases is of fully as much interest as the immediate result.

Of the eleven cases three were children; of these one with disease in the upper lumbar region was entirely and almost immediately relieved by hyperextending the spine. Ether was not used, and after one year, during which the position of the hyperextension has been maintained, there has been no return of the paralysis. In another child, with disease of the first and second dorsal vertebra, the weight of the head alone was not enough to correct the deformity, so that ether was used for this purpose. This was followed by marked improvement in the control of the legs, but the improvement lasted but a few days only. The treatment was repeated once or twice with the same result. Each time the paralysis was relieved, but the improvement lasted for only a few days, the relapse being due undoubtedly to the inability to maintain the corrected position because of the location of the disease. The child is none the worse for the treatment, and is now being treated as formerly in bed with immobilization of the spine. The third child, with a large deformity in the mid-dorsal region, and with complete paraplegia, was considerably improved by the improved position of the spine, but the improvement has not been permanent.

Of the eight adult cases five were men. The oldest patient was a man of forty-three years of age. In only one of the cases was ether used, and this was one of the cases before the apparatus which is now in use had been perfected. At the present time I feel sure that even in this case ether would not have been necessary.

Of this group of adult cases, one of the most suggestive and interesting from a physiological as well as a pathological point of view is the case of the man of forty-three years of age. In this case the disease of the spine had been present for about six years. During the first part of the time he was under my care at the Carney Hospital, but paralysis developing, and having no home, he was sent to the Almshouse Hospital at Long Island, and there he had lain for four years previous to the commencement of the present treatment. While at Long Island he was under the care of Dr. E. W. Taylor, and it was through his kindness that it was possible for me to see him. The knuckle was in the mid-dorsal region, and there was, with the exception of as light tremor in the three middle toes of the right foot, absolute paralysis of everything below the waist, together with a partial paralysis of the bowel. The knees and ankles were stiff, while the feet were not only stiff but were fully extended so as to be in a straight line with the legs instead of at a right angle to them.

The patient was transferred to the Carney Hospital in July of last year, and a plaster-of-Paris jacket applied, with the spine in the hyperextended position. In a few days he could move the toes of both feet, but because of the long disuse the cerebration was uncertain for some time, and when asked to move the right foot, the left one was perhaps the one moved, and *vice versa*. This gradually improved, however, so that later the cerebration was in no respect peculiar.

Since July jackets have been applied about every six weeks, so that the spine has been kept constantly

[1] Read at the meeting of the American Orthopedic Association, held in New York, May 31, 1899.

hyperextended. Ether has been used but once, and that not for the spine but to free the contractions and adhesions about the knees and at the ankles. There has been a gradual improvement in the voluntary control of the muscles of the legs, so that at the present time there is a response in practically all. The improvement has naturally been slow, as after four years of absolute disuse the muscles had undergone the most extreme atrophy. The rectus femoris, for example, was at first represented under contraction by a small band not wider than one's finger and not as thick, while at present, even though it is still very small, it has developed sufficiently, so that when the knee is raised, flexing the joint thirty or forty degrees, the patient is able voluntarily to lift the leg from the bed and straighten the knee.

At the present time the patient is able to stand with the aid of crutches, and by being steadied can swing himself along the length of the ward.

The case is of interest even though there be no further improvement, which is possible, as he has recently developed tuberculosis of the genito-urinary tract, as it demonstrates that the function of the spinal cord can be wholly arrested for at least four years and still retain a portion, at least, of its power of transmitting impulses.

Of the other cases, one of especial interest is Case IV., a young woman twenty-one years of age. Paralysis had been present for about eighteen months, and the disease for four years. The patient was first treated in January, 1898, with almost instant relief from the paralysis, so that in one month she was walking about. She then became and has since remained an out-patient, reporting about once in six weeks to have the jacket reapplied. The point of special interest is that during the extreme heat of last summer her request to have a removable jacket was granted, the understanding being that the jacket was to be opened only when lying down. One week from that day the patient was brought to the hospital with paraplegia. She was sent to the ward, and a fixed jacket applied the following morning. As soon as she was put in position on the frame, no force being used other than her own weight, she remarked, "Now my legs are all right." The jacket was applied and that afternoon she left the hospital walking as well as ever. There has been no trouble since except once when the jacket had softened considerably the legs were said to feel weak and unsteady. The new jacket entirely reli-ved this sensation.

In two of the other cases there has been a temporary return of the paralysis due to the softening of the jacket, and in both cases the condition has been relieved at once by the correction of the position of the spine in applying a new jacket.

The following case is mentioned rather more in detail, as it represents a somewhat different condition, and the marked improvement which followed the treatment was more unexpected than in the other cases. With this one exception the cases which are here reported had developed the paralysis in connection with the acute or active stage of the disease. In this case, however, the active disease in the spine had occurred many years before, the spine probably having become anchylosed in the position of extreme deformity. In such a condition naturally very little was expected as the result of any attempt to correct the position of the back, the paralysis presumably being due to a late suppurative process developing in the rigid canal and thus causing pressure. The actual result, however, in this case was equally as striking as that obtained in the others. The paraplegia was much lessened by the application of the first jacket, and after the last one, which represented the third jacket, she was able to be up and move about. In this case the sensory paralysis which was present was likewise relieved.

The cases in detail are as follow:

CHILDREN.

Case I. W. A., a boy eight years of age, with disease of the upper lumbar spine of two years' duration. Paraplegia developed one year ago and was entirely relieved by hyperextending the spine without ether. Plaster-of-Paris jackets have been worn since then, the same position of the spine being continued. There has been no return of the paralysis as far as the motor central is concerned, but the knee reflexes are more lively than normal. There is no ankle clonus or noticeable weakness of the legs.

Case II. J. F., a boy six years of age, with high dorsal caries of one year's duration and during that time he had been under treatment with the usual braces. A few months previous to the time of the examination the patient developed complete paraplegia. Ether was used and the spine straightened, with marked relief, so that the child was able to move the legs about quite freely. In a few days, however, the paralysis returned, owing probably to the location of the disease and the inability to hold the spine hyperextended. The same manipulation was attempted two or three other times, and each time there was the same improvement, but also the same relapse in a few days. The child is none the worse for the treatment, and at present is being treated by recumbency with as thorough fixation as is possible.

Case III. R. L., a girl eight years of age, with Pott's disease of three years' standing, and quite a marked knuckle. She was treated at the Good Samaritan Hospital. Several attempts were made without ether to hyperextend the spine by both Dr. Thorndike and myself, and while two of the attempts at least were followed by improvement, it was of but short duration. At present the paralysis is the same as before the treatment was begun.

ADULTS.

Case IV. K. St. J., a young woman twenty-one years of age, with Pott's disease of four or five years' duration. There was a marked deformity, and paraplegia had been present for nearly two years previous to the time of the correction of the position of the spine. Ether was used and after the correction a plaster-of-Paris jacket was applied. The paralysis was relieved at once and there has been no return, except once when the jacket was partially removed at home, and once or twice when the jacket has softened. At each time the correction of the position and a new jacket has relieved the trouble. The knee jerks have remained much exaggerated. There is no ankle clonus and the voluntary motor control is normal.

Case V. T. D., a man twenty-one years of age, with disease in the mid-dorsal region of two years' duration. Paraplegia, in which the bowel also was involved, developed twelve months ago. The position of the spine was corrected without ether with instant relief of the paralysis. An abscess has developed since

the treatment was commenced, but there has been no further trouble from paralysis either of the legs or bowel, except once when there was a slight temporary return due to the softened jacket. A new jacket entirely relieved the difficulty. The knee reflexes are still exaggerated.

CASE VI. H. G., a man twenty-eight years of age, with disease in the lower dorsal region of two and one-half years' duration. Paralysis had been present with the bowel also involved for six months prior to the treatment. The correction of the position relieved the paralysis at once and there has been no trouble during the past year, except slight temporary trouble when the jackets have softened.

CASE VII. A man thirty-six years of age, with mid-dorsal Pott's disease of comparatively short duration previous to the time of the first examination in April, 1898. At that time there was also disease of one knee-joint. The treatment for the spine was imperfectly carried out, owing to the fact that the patient lived at a distance from the city, but with the one jacket with an improvised apparatus there was a marked improvement in the motor control of the legs. The treatment was discontinued and the paralysis returned.

CASE VIII. T. M., a man twenty-nine years of age, with disease of the mid-dorsal spine of five years' duration. At the time of the first visit at the Carney Hospital in January, 1899, there was well-marked paraplegia. This was entirely relieved by the application of a jacket in the hyperextended position, and there has been no trouble but once when the jacket had softened.

CASE IX. T. D., a woman thirty-two years of age, with disease in the upper lumbar region of two years' duration. Paralysis had been present for about three months previous to her admission to the Carney Hospital four weeks ago. A jacket was applied in the hyperextended position and there has been a steady improvement, so that the patient is now able to walk about.

CASE X. P. M., a man forty-three years of age, with disease in the mid-dorsal region of six years' duration. For four years previous to beginning the present treatment he had lain on his back in the Almshouse Hospital at Long Island (Boston) with absolute paralysis of both legs from the waist down, together with paralysis of the bowel. It was through the kindness of Dr. E. W. Taylor that I was able to see the patient. Nine months ago he was transferred to the Carney Hospital. At that time there was absolutely no voluntary muscular movement below the waist except a slight tremor in the three middle toes on the right foot, and this was so slight as to escape notice unless carefully looked for. Both feet were fully extended at the ankle and were rigid, partly due to joint adhesions, and partly to muscular stiffness. The knees or hips also could not be bent. The legs were edematous, and the circulation as shown by the condition of the skin was very poor.

Without ether the spine was hyperextended and a jacket applied. Within a week there was distinct voluntary movements in both legs. A few weeks later, under ether, the tendo Achillis were cut and the joints of the legs manipulated.

Until four months ago the patient made a steady gain, so that there was a voluntary reponse in practically all of the muscles of the legs. At that time a tubercular process developed in one testicle, necessitating surgical interference with a temporary discontinuance of the treatment for the back.

For the past three months the spinal treatment has been continued, together with the manipulation of the legs, and even though there are some signs of tubercular process higher up in the genito-urinary tract, the improvement has gone on so that there is strength enough in the anterior thigh muscles to raise the foot from the bed and straighten the leg, when the knee had first been flexed and supported. With the aid of crutches and an assistant to steady him he is able to walk the length of the ward. The improvement has been so steady that were it not for the manifestation of the disease in the other organs I feel very sure that he would be able ultimately to go about independently.

CASE IX. Miss E., a woman forty years of age, with a large rounded kyphosis involving the mid-dorsal region, which had developed over twenty years before.

In 1892 there was an attack of paraplegia lasting for three months. In September of last year the paraplegia again developed with sensory disturbances. The reflexes were extremely exaggerated and the voluntary motor control entirely lost. The patient was seen in consultation with Drs. S. A. Lord and C. F. Painter.

A jacket was applied with the spine hyperextended as much as possible, and since then three or four other jackets have been used. With each the paralysis has lessened, so that at present the patient is able to walk about freely.

The apparatus which was used to obtain the desired position of the spine was described and pictured in a paper read by me before this Association at the meeting held last year, and afterwards published in the *Boston Medical and Surgical Journal*, July 28, 1898.

A HOSPITAL CLEARING HOUSE.[1]

BY CLARENCE J. BLAKE, M.D., BOSTON.

WITH the aggregation of population in cities, the multiplication of facilities for suburban transportation and the growth of urban hospitals, there comes more and more urgently to the administrators of trusts for medical relief the question of making such provisional classification of applicants, in out-patient departments especially, as shall assure to the worthy poor, for whom these institutions are principally maintained, the full meed of time and attention which is their due.

From a business standpoint the hospital may be defined as an institution in which capital and skilled labor combine to provide such members of the community as are temporarily disabled and without means of support with the maintenance and care which shall fit them to become again self-supporting and active community factors.

The hospital is a free repair shop for human machines and the capitalist who contributes to its support does so with the basal, though perhaps not with the defined, understanding that his contribution is returned to him through the community in the lesser number of incapacitated and dependent machines; while the doctor, who furnishes the skilled labor contribution, finds his return not only in the same manner as the capitalist citizen, but also in many other ways which

[1] Read before the Massachusetts Medical Society June 14, 1899, and recommended for publication by the Society.

need not be enumerated before this Society and which enure greatly to his own well-being and usefulness.

It is incumbent upon both these contributors to see that their contributions are justly disposed.

The ability to contribute in itself constitutes a trust.

It will be seen that the foregoing statement leaves out of consideration many of the motives which have led to the foundation of and continuance of contributions to the support of our hospitals; not that these motives, or the sentiment underlying them, which is the vital stimulus of all human brotherhood, is decried, but that the care of and provision for the needy sick is so serious a business as to demand the best judgment we are able to bring to bear upon it, and often the fittest use that we can make of a cherished sentiment is to split it into kindling-wood and with it start the fire in the harder fuel of our best endeavor.

Setting aside the emergency cases, whose urgent need of help is paramount to every other consideration, the applicants for hospital relief whose pecuniary fitness has to be considered are broadly divisible into two classes: (1) Those taken into the wards for more or less continued treatment as inmates; (2) ambulant cases; patients who, residing in their own homes, come to the hospital for occasional or for daily treatment. The latter make by far the greater number, and it is in response to their needs that the so-called out-patient departments of our hospitals have grown to their present dimensions, and have come to require administrative effort in classification far beyond anything that would be needed in a hospital receiving house cases alone, for with a patient admitted to the house there is usually ample opportunity for leisurely investigation.

That the sifting-out process in the admitting room of the out-patient department of a large hospital, however, is one which must be done with precision and celerity is shown not only by the large number of ambulant patients applying for relief but by the number of sub-divisions which must be made in order to secure to the eligible patient in the waiting-room protection not only from the presence of contagious diseases but from the encroachments of those pecuniarily unfit applicants, who, either through ignorance or guile, rob not so much the institution and the doctor as the really needy.

The "pecuniarily unfit" cases in out-patient departments in large cities may be generally estimated to constitute from five to ten per cent. of all patients applying for treatment and they may usually be classified as follows: (1) Persons ignorant of hospital usage and both able and willing to pay for professional services rendered; (2) persons who by a pretense of poverty seek to procure medical services for which they are able to pay; (3) the class of persons known in institutions' departments as "rounders," people who go from one hospital to another seeking advice and treatment, a species of medical mendicants; (4) persons who are able to pay a small fee but who are sent to the hospital by their family physician instead of being referred to an individual practitioner.

That the people who come under these four classes should be allowed to share indiscriminately with the proper objects of charity the hospital bounty is a lapse of justice in two directions, justice to those who support the hospital for a definite charitable purpose and justice to the doctor and the patient, for, with the large number of truly worthy patients, the time which the doctor can afford to give to the hospital is none too much to be divided among the many, and with the increasing difficulty of gaining a remunerative foothold in private practice the doctor, and especially the younger doctor, should have the fee, however small it may be, which the patient is able to pay for service rendered.

Various suggestions have been made as to the best method of dealing with the "pecuniarily unfit;" one, that an already existing institution like the Associated Charities should be asked to establish a department or to use some of its already operative machinery for the investigation and detection of these cases; another, that the doctor who treats the patient in the hospital out-patient clinic should himself question the patient as to his pecuniary condition.

To this latter proposition there are two very evident objections, namely, that the process of questioning takes time which properly and under the rules of the hospital belongs to the worthy patient, and also that there should be no connection whatever between the private practice of the physician for which he is paid and the practice in which he gives his services under the auspices of the hospital of which he is one of the recognized staff.

Against the first proposition it may be urged that while the Associated Charities organization and its records may be occasionally availed of, the duty of protecting their dependents and patients belongs properly to the hospitals themselves, either individually or both individually and through the medium of some organization in which they shall all have part and to the support of which they shall all contribute.

The extent to which individual supervision is exercised in this city and the opinions in this matter of those having hospital administration in charge are perhaps best set forth in the following communications.

The first is a letter from Dr. Farrar Cobb, Superintendent of the Massachusetts Charitable Eye and Ear Infirmary:

DEAR DR. BLAKE: — You asked me to write you in regard to the system in use at the Infirmary with respect to weeding out unfit cases. Allow me to say in the first place that it is very exceptional for any but poor and needy patients to obtain admittance to the wards of the Infirmary. The questioning and investigation of all the cases recommended for admission to the hospital is especially thorough, and after careful observation of the inmates of our wards for a long space of time, I am convinced that it is rare to find a patient who is not deserving of the charity of the Institution. There have been, however, occasional instances of deliberate misrepresentation, and consequent admission to the hospital, but such cases are very rare.

In regard to the attendance in the Out-patient Department, we have for three years carried out the following method: The registrars in the Out-patient Department are instructed to question any case which they think from appearance, or address, or occupation is able to pay a physician two or three dollars, and call attention to the fact that the Institution is only for the needy poor. In some instances each day it is necessary to send troublesome cases to the executive offices, and have them more carefully questioned. The limit of our questioning is to ask a suspected case whether he is willing to sign an affidavit that he is an object of charity. If the answer is yes, no further questioning is done. The registration slips of each case that has been questioned at the office are stamped with one of the two rubber stamps which I enclose,[2] and put on file in the records. The system as it is now working is not

[2] "This case was unfit and therefore was refused treatment;" "This case has been questioned at the office and is a suitable case."

very successful. I have no doubt that a considerable number of unfit cases receive treatment each day in our Out-patient Clinics. It is my wish within a week or two to put one of my best and most responsible clerks in charge of a *special inquiry* room in the Out-patient Department for two hours each day, and to have all cases suspected to be able to pay sent to him for thorough questioning.

One thing that I especially object to on theoretical grounds is the questioning of the patients by the doctors themselves, especially in the presence of other patients. I am decidedly of the opinion that such practice is wrong, and liable to misinterpretation. Investigation and questioning should be done by the executive department through some responsible agent. As I said above, now that our new Infirmary is running successfully I hope within a week or two to make a radical departure in the line suggested. Yours very truly,

FARRAR COBB.

At the Boston City Hospital, the out-patients are refused treatment by the physician in charge of the department at which the patient applies if the physician thinks the case in question unsuitable for charity.

If the patient insists upon being treated after being refused treatment upon the grounds of pecuniary unfitness the question may be referred to the Superintendent for futher investigation and decision. In the eye department there is a rule that the patient asking for a prescription for gold-rimmed glasses shall be refused treatment on the ground that the ability to afford this luxury implies ability to pay a physician. Dr. Rowe may be quoted as saying: "I do not believe that abuse can be stopped until all hospitals in all cities agree on some simple rational system and live up to it."

At the Massachusetts General Hospital all new out-patients are seen by the admitting physician and questioned as to their ability to pay for medical treatment, unless their appearance evidently indicates that they are suitable cases for charity; patients who admit their ability to pay something are refused treatment; those in regard to whom the admitting physician is in doubt are referred to the superintendent for further questioning and final decision.

Patients known to have been treated in other hospitals for the trouble for which they come to the Massachusetts General Hospital are referred back to the original clinic for treatment unless there seems to be a good reason for retaining them.

At the Boston Dispensary all new patients, except such as are evidently charity cases, are questioned as to their ability to pay for treatment. Doubtful cases which it seems best to admit are reported to the physician who is to have charge of the case for supplementary questioning.

In one way or another, therefore, the hospital administrations seek to winnow their applicants at the gate, but the winnowing process is one which lacks uniformity and co-operation and hence fails of the best execution.

The use of the term clearing house in this connection is not inadvisedly made, for in addition to its limited application in the banking system as early as the year 1856 in this country, a clearing house in other lines of business has come to be a central bureau not only for the establishment and maintenance of balances but for such co-operative investigation as may constitute it a bureau of information as well; and it is readily conceivable that the establishment and maintenance by hospitals in a large city of an officer to whom, or a bureau to which, there could be referred, for more leisurely investigation, pecuniarily doubtful cases, would not only relieve the individual administrator of a part of a most unwelcome task, but would in time become a channel through which there should flow interchange of ideas, and from which there should emanate to the public instructive information as to the rights as well as the obligations of hospitals.

Such an officer or bureau constituting a clearing house should be under the direction of a board of control, said board of control being not as is proposed in the new Dispensary Bill of New York, the State Board of Charities, or other alien organization to which is given a dominant power, but a board of control made up primarily of the medical superintendents of the hospitals themselves. A board thus formed and backed if possible by legislative enactment, making fraudulent abuse of medical charity a misdemeanor, would be likely to be an efficient piece of machinery for the attainment of the desired end.

The attention given to this question of the abuse of medical charities in the meetings of the National Association of Charities and Correction in recent years and the agitation accompanying the framing of the Dispensary Bill in New York are among many evidences that this subject is attracting the thoughtful consideration of the public at large, and the conclusion that any carefully-considered remedial measure emanating from medical sources is likely to receive cordial support, is based upon the fact that while the abuse is one which concerns the well-being of the community as a whole, its correction is properly one of the responsibilities of the medical profession.

VOLUNTEER AID WORK IN FOREIGN TERRITORY.[1]

BY ELLIOTT C. BRACKETT, M.D., BOSTON.

In responding to the request of your committee to make a few remarks on the volunteer aid work of last summer, it seemed best to restrict such to some of the general considerations which would suggest themselves from an opportunity of seeing this work conducted under unusual conditions. From this standpoint the position of bodies of volunteer relief, particularly in these days of well-equipped facilities for meeting emergencies, is a question of great interest.

The work of the Massachusetts Volunteer Aid Association of last summer is so well known to you all, — probably the majority of those present were more or less intimately connected with its affairs, — that I do not intend to take your time with the details of any special department. It came into existence with the urgent demand at the time, filled its mission, and then was over. But now that it is a thing of the past, and yet is not too far distant for us to lose the active interest in its affairs and what it accomplished, there is much we can learn from the retrospect of the experiences during this time, and it is my object to briefly consider from this point of view the results of my connection with this Association in its work in Santiago.

Toward the latter part of July the officers of the Volunteer Aid saw the need of having in Cuba a

[1] Read before the Massachusetts Medical Society, June 14, 1899, and recommended for publication by the Society.

representative of the Association, who should have charge of the distribution of the supplies, determine from personal observation what needs of the men at the front could be reached by this society, and act as the representative in its work out of the country. Many supplies which were fast collecting here had already been sent, but they were not in charge of any one, either on the way or after their arrival, and it was doubtful if they would reach their intended destination or receive the proper distribution; and these doubts proved to be well founded, for in the condition of affairs at that period every one had more than enough of his own work to do, and could not be expected to give attention to other affairs requiring so much time and attention. It was this position it became my privilege to take.

The plan was to send such supplies as were at hand to Santiago, to have them distributed directly to the regiments according to the special needs, and to personally determine what might be the special requirements of the men at the time, which could be met by an independent organization. The real state of affairs at this time was, as you all know, much a matter of conjecture. Information was meagre and unreliable, but that there was distress and suffering, and particularly among the men who were not hardened by long training, was certain. It was known that sickness had appeared, and was on the increase, that it was approaching the rainy season, the worst of the year, in a province which had always been infected with contagious disease, and these conditions, combined with the fierce heat of the tropics, and the presence of so many troops crowded together, left no room for doubt of the need of aid in a general way. With these as facts were rumors of scarcity of so many necessary supplies, and although the probable exaggeration was recognized by all, the indication of the need of aid was plain. Until further information could be obtained it was proposed to send such supplies as would be needed by the sick and convalescent in the camps and in hospitals, both in the way of foods and clothing, while the special needs could be determined after arrival, and procured if such were possible.

The problem of reaching Santiago, and in the shortest time possible, was met by the officers of the Association in a fortunate way. At this time the province was closed to ordinary travel, no steamers except a few of the government transports were in this part of Cuba, and quarantine had been declared against the port; therefore it became necessary to reach the destination by an indirect route. Through the courtesy of the Boston Fruit Company the supplies were sent, and I took passage to Port Antonio, Jamaica, one hundred miles south of this part of Cuba, and from thence a small sailing vessel was chartered to complete the journey to Santiago. In this way the errand reached its destination early in August, a little over ten days from the time it was first considered as a plan.

Here, the conditions under which the men had been placed during the previous two months gives one the best idea of the position of an organization such as the Volunteer Aid in its effort to render assistance so far from home, and this applied particularly to the men of the volunteer troops, for whom the work was originally but not solely intended, who had not the opportunity to learn from experience or from training how to save their energy and avoid many dangers under conditions so unusual and trying even to veterans, and who would in consequence suffer more from the results of their exposures.

Without time for acclimation, these men had landed, after nearly two weeks' confinement on a crowded transport, had marched through an unusually rough and hard country, were two days in the fight, and for three weeks immediately following lived in the trenches for most of the time with no shelter either from the sun or the almost deadly rains. During this period they were on the short rations which their difficult position necessitated, and exposed during the day to the intense heat of a tropical midsummer, and at night to the damp chill found in these latitudes. From the time of the surrender of the city they remained camped in the small shelter tents under practically the same conditions. By the early part of August the prolonged exposures, heat, and unusual living had begun to show itself extensively in the very great debility among the men in general, and the breaking out of diseases. Fortunately the most prevalent were the forms of the climatic disorders rather than the contagious diseases, but the effect of this severe type of malaria on the men, already much weakened by the conditions of the previous two months, was much more disastrous than it would have been under any other conditions. There was no provision for the convalescents either as regards place or food, and since the fever usually produced digestive disorders, the recovery was extremely slow and subject to relapses, and this long absence from the ranks threw additional burdens on those remaining well. Added to this physical debility was the uncertainty of their detention on the island and this, with the knowledge that their work as troops was practically over, that they were merely waiting their turn to be taken home, and with the increasing disease which daily thinned the ranks of the men in active service, made the condition seem still more anxious, when the question of prolonging the stay was considered, and this in a city where the usual epidemic of yellow fever was thought by all to have already begun, and with conditions ripe for its development. It was in such a situation, the result of the sudden culmination of events, that properly-directed aid from an independent organization could be of great material help to tide over the emergency, although whatever one branch might accomplish could be but a comparative mite in the presence of such general need. The emergency which the officers in that city had to meet was an unusual one, both in character and proportion. The amount to be done was enormous, the conditions both of place and season difficult to combat, the facilities meagre, and the corps of workers small and already weakened by their hardships. It can be truly said that the improvement which took place, and the low mortality which finally resulted, was due alone to the strenuous efforts of the officials left in charge, in spite of their handicapped position, and of the lack of early aid in the way of suitable supplies and means from headquarters in this country.

In such an emergency the most important needs must receive first consideration, for something must give preference. So far as the troops are concerned, the sick must be attended to as best facilities will allow, the body of troops which make the working force must be cared for, and the convalescent sick must receive later attention. This is not neglect, but the

only solution of the difficulty, and in times like this the independent organizations find their work waiting for them. It is to fill in the gaps which in the sudden emergency cannot be or are not provided for, and from the position far away from home cannot be filled without disastrous delay. The work naturally has but little to do with the well; such is not necessary, and would interfere with the system so necessary to maintain proper discipline.

I shall not enter into the detail of the work of the relief of this department during last summer. It would be enumeration of days of tiresome routine. The character of the work to be done and the direction in which to put it forth was only too evident. It remained only to do what was possible with the limited material and the conflicting circumstances of place and facilities, trusting that the effort would meet with success. Fortunately the stay of the volunteer troops in this section was not prolonged.

The relief work in a territory so remote from any base of supplies must consist in using material at hand to the best advantage; the supply will be short, and economy is necessary. The difficult problem is that of the means of transportation, and the method of distribution, for one ought not depend upon aid from those whom the object of the errand is to help, and who are already overburdened with their own duties of daily routine. The situation shows definitely along what lines the working of an organization of this kind should be carried on without conflicting in any way with the regular service, but rendering its aid where it is needed and welcomed.

The position of relief bodies has occasionally had criticism from various sources, too often, I fear, by those who in the time of stress have received their bounty. The criticism without a doubt confuses the question of the need of the existence of such bodies with the time that their work is needed, for so long as such campaigns as that of the past year are instituted, and so long as volunteer troops are used, there will be a time in campaigns when the work of such bodies will be welcomed to prevent avoidable suffering, and such loss of life as is not an incident to the active part of a campaign, for during campaigns of recent years the usefulness of such work has been shown too clearly, and although now with the advance in the departments of science, which shortens time and space, allowing emergencies to be met with greater ease and promptness, its work becomes more defined but none the less important.

The general operation of an organization of volunteer work in a campaign in foreign territory must be considered from a different point of view, from the distribution of relief at home within easy access of supervision, and of supplies of all kinds. An expedition of invasion would naturally have its own provision for the prevention and relief of these same conditions, and with time for preparation in these days, such would undoubtedly be done, and we may consider that there is a time when there will be the demand for volunteer aid, and such is in the early part of a campaign, particularly if begun as most are, with insufficient time for complete preparation, when the attention of the service is directed to providing for the certain requirements, and the possibilities which pertain to comforts of sick and requirements of convalescents, and of affairs which do not affect the regular service, which cannot receive the same attention, especially when arising from a condition of so complete unexpectedness.

Therefore, the work of such organizations is needed to supply the emergency needs, which take time to collect, and individual attention to properly distribute, and particularly during this early period, when there are conditions to be met which would not be found at a later time, and such was so clearly illustrated in the latter part of last summer. To new men, unused to the hardships, and in the waiting part of a campaign, and of whom it is not asked to become regulars or veterans, the advisability of mitigating some of the rigors of campaign life is evident, rather than sacrifice men to the hardening process, for the sake of the training alone. The situation calls for requirements not provided for in the haste of departure, or perhaps not belonging to the regular service, and in no way is this shown so distinctly as in the case of convalescents. There are some kinds of work, notably among such are those of humanitarian nature, which require individualism, and when carried on by too large organizations lose this essential by too much of detailed duties. Volunteer work also has the advantage of being unrestricted by the slow-acting and cumbersome regulations which are the necessity of a large organization, and is able in consequence to insure that relief may reach its destination promptly, and without the otherwise certain delay. It is necessary that a relief expedition should be complete in itself, that an independent source of relief supply should be maintained, with such provision for its distribution that demands on it can be met without delay. The particular need for this period and for this kind of work is for not only what may be classed as comforts of the sick, but for the more general care of the convalescents.

The method of procedure must vary with the different instances, but the safe rule is to reach the men through official lines, and in the direction indicated by them. In positions like those of last summer, the maintenance of army organization and system is unquestionably essential; the greater the emergency and the difficulties, the more important this becomes. By working in this way all possible conflict with personalities or with regulations are avoided, and the danger of preference is not to be feared. Aid offered in this way was always willingly accepted and appreciated, and gave the assurance of reaching where it was most needed, rather than to the most apparent distress, which too often would be the nearest at hand.

An official in charge knowing the conditions and the needs of the whole has the best opportunity of pointing out the place of greatest demand. A commissary who is daily searching for the required stores for the camp knows better than any one the kind of foods most needed and where; and the surgeon knows the requirements of his hospital outfit, whether medicine or foods or special hospital supplies. In this distribution of supplies, when from the distance from home and the hurry of departure, economy is most essential, this care in distribution becomes most important to a successful undertaking.

Viewed from the experience of last summer, in order that this work should be carried on successfully, it is necessary that:

(*a*) It should be directed toward supplying such needs as have resulted from the confusion and hurry in the initiating of a large campaign.

(*b*) It must be carried on with deference to the

judgment of the regular officers in the command, and should be particularly directed to supply the needs which have been found lacking, and which they better than any others are in a position to appreciate.

(*e*) The work must be accomplished without call on the regular service for aid, either in transportation or distribution; that is, it must be a stream of supply from an independent source, and one whose presence is felt only by the relief it brings.

Clinical Department.

THE REPORT OF A CASE OF PUERPERAL ECLAMPSIA WITH COMPLICATIONS.

BY EDMUND E. HILL, M.D., SUNCOOK, N.H.

I PRESENT for your consideration the report of a case which occurred in my practice about a year ago, and which I deem interesting and worthy of note, not so much for the case *per se* as for the complication which arose during patient's illness. The history is as follows:

Mrs. K., age twenty-seven, American, of medium height and well nourished, called at my office April 2, 1898, and engaged me to attend her during confinement, which, she said would be about the first of June; she was then seven months pregnant. She has during this time suffered no inconvenience whatever, except some slight nausea and vomiting the second and third months.

For a week previous to consulting me she had had slight pains in the lumbar region, and for this reason, together with increased frequency in micturition, she thought she must have some kidney trouble. I make it a rule, if possible, to examine the urine of every pregnant woman engaging my services at some time during the latter months of pregnancy. I did so in this case not only for my own satisfaction but for the soothing influence it might exert upon the nervous system. Result of analysis negative, or, in other words, normal. I did not think it necessary to examine it microscopically. A few days later I made known to her the result of the analysis and noted its pleasing effect.

I heard nothing more from her until Sunday afternoon, May 1st, just about four weeks from the time of her former visit. She was now eight months along, complained of a severe headache located near base of brain with darting pains in neck; five days before had had a similar headache lasting two or three hours; had not felt quite as well since first attack. Prescribed Antikamnia in five-grain doses and a solution of bromide of potassium to be taken at bedtime. Was aroused from slumber the next morning at 2.45 by Mr. K., husband of my patient, who stated that he had been awakened from sleep about one o'clock to find his wife sitting up in bed grasping her head with both hands and complaining bitterly of a severe pain in the back of her neck. In a few seconds she threw up her hands and fell back in a spasm; he wished I would go and see her as soon as possible. I went with fear and trembling. Upon my arrival found she had had in all three convulsions, each lasting for a few seconds; had not had any during last half hour; was feeling quite well but very excitable. No dilation of os uteri found upon examination gave 30 grains each of bromide of potassium and chloral hydrate per rectum, which produced a quiet sleep; left a solution of the six bromides, one teaspoonful to be given every two hours, directing them to call me at once should she have another spasm. I left for a few hours. For unavoidable reasons it was 3 P. M. before I saw the case again; had had one more convulsion during my absence, making four in all; was now in a semi-stupor. I informed the husband of the true condition of affairs, and that I desired a consultation. Dr. Walker, of Concord, was summoned by telephone, and in less than an hour was upon the spot. It was decided that patient was suffering from eclampsia, and the first and only thing to do was to empty the uterus as soon as possible. Patient was etherized, manual dilation performed, and a dead child extracted after some difficulty, by version; during the whole time all necessary antiseptic precautions were observed. Called at 9 P. M., patient had recovered from ether fairly well; was quite comfortable. Temperature was 99°, pulse 100, and respiration 18.

May 3d. Rested easy during night; could pass no urine; catheterized and drew away eight ounces. Temperature 101°, pulse 115, respiration 20.

May 4th, third day. Taking nourishment well; lochia normal; temperature 101½°, pulse 115, respiration 20. Ordered magnesium sulphate, one drachm every hour until bowels moved freely, hoping it might also reduce the fever.

May 5th. Bowels moved three times from salts given the preceding day. Temperature 102½°, pulse 120, respiration 24. Ordered a vaginal douche of corrosive sublimate 1-3000 to be given morning and evening.

May 6th, fifth day. Temperature 102½°, pulse 120. Odor from lochia quite disagreeable; complained of pain in the left iliac region, although no localized point of tenderness could be found.

May 7th. Temperature 102¾°, pulse 122; pain over region of bladder; urine loaded with albumen; pain on left side more severe; lochia very offensive. Introduced a Sim's speculum into vagina and scraped out uterus with a dull curette, following this with a uterine douche (corrosive sublimate 1-5000).

May 8th. Is resting fairly well nights; urine high colored and concentrated. Left a solution of sweet spirits of nitre and citrate of potassium.

May 9th. Temperature 102°, pulse 120. Gave another uterine douche; seems a little weak this morning. Ordered a teaspoonful of brandy in milk every two hours. Left calomel, five grains, and bicarbonate of soda, twenty grains, to be followed in a few hours by a rectal enema.

May 10th. Summoned this morning by telephone; patient had had a secondary hemorrhage, lost considerable blood and was quite pallid when I arrived. Complained of not being able to see very well. Temperature 102°, pulse 124. Ordered brandy every hour in drachm doses, small doses of ergot, and enough morphia to ensure rest; pain in side not as severe.

May 11th. For the first time since May 1st had a natural movement of the bowels; troubled a good deal by gas; tongue moist. Temperature 103½°, pulse 132. Ordered tincture of mux vomica, five drops every three hours; nourishment every two hours.

May 12th. Temperature 100¾°, pulse 100. Tongue moist; gas less troublesome; bowels not as distended; vaginal douche every six hours. Discharge from uterus more abundant when lying on right side.

May 13th. Temperature 100°, pulse 108; restless; complains of shooting pains in right lumbar region and both sides of chest. Codeine, one-quarter grain every three hours, kept patient easy.

May 14th. Temperature 99°, pulse 108; complains of pain in left groin. Left thigh and leg swollen, pearly-white and extremely tender; wrapped the limb in cotton batting and covered with oiled silk.

May 21st. Just one week from last report. During this time there has been very little change of temperature. Tongue dry and hard; neuralgia troublesome; swelling in limb has diminished. Discharge from uterus very abundant. Examination by vagina revealed nothing of importance. Examination of abdomen. From a point corresponding to the left ovary and extending upward into the left lumbar region and to within about two inches of the median line could be felt the elongated outline of a tumor-like mass about the size of a large cocoanut. On palpation a gurgling sound could be heard followed immediately by a profuse discharge from the vagina, and patient would complain of feeling faint.

May 22d. Temperature 102°, pulse 120. For the first time in three weeks passed a very little urine without the use of catheter. Have washed out bladder with plain water every morning and night for a week.

May 24th. Nurse informed me patient had had a bad spell at 5 A.M.; came near fainting while being douched; recovered under two drachms of brandy. Ordered ten minims of digitalis every four hours. Temperature 102°, pulse 120.

May 26th. Swelling in left leg very nearly gone; discharge from uterus profuse as ever, and very offensive; taking nourishment well, consisting of egg-nog, milk and brandy, malted milk, Mellin's food, etc. Sat up ten minutes to-day.

May 28th. Temperature 99°, pulse 120. Complains of a good deal of pain in left side of abdomen; is getting deaf; complains of ringing and buzzing in ears, particularly the right.

June 1st. Is taking nourishment well but is daily growing thinner; sits up five or ten minutes a day; restlessness is controlled in a measure by quarter-grain doses of codeine given every three hours.

From June 1st until June 12th, (time of patient's death) the temperature ranged from 99° to 102°, pulse 108 to 128, respiration from 30 to 40. In the meantime Dr. Walker was consulted as to the advisability of operating upon this abscess, but, as it was discharging freely of itself, it was not thought best. Patient continued to grow weaker day by day and finally succumbed June 12th.

With your permission we will take a brief *résumé* of the case: As near as I can learn from those who were intimately acquainted with our patient, she had suffered from more or less pain in her left groin during the entire period embraced in the eleven months of her married life. From an authentic source we also learn that a few months before marriage husband had contracted gonorrhea, and during winter and spring preceding birth of child had been a great sufferer from articular rheumatism so called, presumably gonorrheal arthritis. At the beginning of the ninth month of gestation was seized with puerperal eclampsia, after delivery. She developed a cystitis which refused to yield to either local or general treatment, and the use of the catheter could not be dispensed with during the entire six weeks of sickness. Had a secondary hemorrhage on the tenth day, which weakened patient much. First complained of pain in left groin, which afterwards extended up into left lumbar region about the sixth day, the discharge began at this time; this pyosalpinx or pyoöphron will be referred to later on. The neuralgic pains were first noticed on the thirteenth day and continued first in one place, then in another, until the end. Phlegmasia alba dolens was first noticed the fourteenth day, beginning in the left thigh and working downward. I look upon this as a secondary phlegmasia due to septic absorption.

During illness temperature ranged between 99° and 103°, pulse between 108 and 132, respiration between 20 and 40. I have noticed that when the pulse remains above 100 for any length of time in an obstetrical case, trouble may be looked for before the case is discharged.

Treatment. — Although all antiseptic precautions were taken in regard to catheter and soft parts, yet a cystitis developed about the ninth day. Washed out bladder in morning with plain water and at night used a saturated solution of borax, and opium in suppository form for relief of pain, gave internally diuretics and demulcent drinks, such as elixir buchu and acetate of potassium, twenty-grain doses of acetate of potash in half a tumbler of water, lithia and apollinaris water, for gas in stomach and bowels, five drops of tincture nux vomica every three hours, as a tonic, tincture chloride of iron, ten drops every four hours; for the heart, tincture digitalis and cactina pellets.

Nourishment. — Egg-nog, malted milk, Mellin's food, beef tea and plain milk, nourishment to be taken every two hours during day and every three hours during night, with very few exceptions; amount taken each time, one cupful; brandy, whiskey and wine administered the last three weeks.

In conclusion, I will say that in my opinion this pyosalpinx did not originate at time of patient's illness but rather nine or ten months before. You will recall to mind my previous statement that she had suffered from more or less pain in the left ovarian region since marriage, and that at or about this time her husband was reported as having gonorrhea. Might it not be possible that the gonococci entered the uterus at this time, found lodgment in the Fallopian tube, kindling a smouldering fire from which originated a chronic salpingitis, accounting for the pain, and which was finally fanned into a blaze which swept everything before it. The result of this salpingitis closely resembles in its effect the destruction which follows a stroke of lightning, differing only in its mode of onset. We have all watched a thunder-shower during the summer months, have seen the flash of lightning and immediately after heard the thunder-clap; in this case the flash was preceded and not followed by the clap.

The oft repeated question, "Is marriage a failure," can, I think, in this case be answered in the affirmative.

A New Association. — We learn from the *Journal of the American Medical Association* that an association for the promotion of public hygiene has been organized in Germany by V. Leyden, Rübner and other prominent members of the profession, and officials. Lectures, meetings, circulars, everything tending to educate the people in matters of hygiene is included in its scope.

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D.

(Concluded from No. 7, p. 166.)

Marandon de Montyel [10] has studied the condition of the knee-jerk in the three periods of general paralysis in the same patients and has come to the following conclusions: In general paralysis the knee-jerk is much more frequently abnormal than normal; it is much more frequently exaggerated than diminished, and moderate exaggerations are more frequent than marked. It is more frequently altered in the first than the second and in the second than in the third period. It is most often exaggerated in the depressive form of general paralysis. Frequency of exaggeration of the knee-jerk is in inverse ratio to the frequency of troubles of speech. The exaggeration is not due to the suppression of cerebral influences, since it has its minimum frequency in the last period, where the suppression is, on the contrary, at its maximum. The degree or form of the alterations of the knee-jerk has no prognostic value. It is not correct to say that the preservation of the knee-jerk is associated with a minimum of physical signs, since this preservation is more frequent in the third period than in the other two. It is not uncommon that, in remissions, the alterations of the knee-jerk persist when the physical signs have so far improved as to pass unperceived. This is an important element to investigate in determining whether the cure is only apparent. In alcoholic patients as compared with syphilitic the knee-jerk is more often altered, either exaggerated or diminished. It is impossible to establish any relation between the alterations of the knee-jerk and the disturbances of sensibility to pain or touch.

The same writer [11] has also studied the condition of the tactile sensibility in the same patients in different periods of general paralysis, and has come to the following conclusions: In 70 per cent. of the investigations he succeeded in confirming the condition of the sensibility, the failures being more numerous in the more advanced stages of the disease. In 12 per cent. of the cases he found the tactile sense altered, exaggerated, diminished, lost or delayed, but in uncomplicated cases there was no form of paresthesia. The changes were always general and never localized. The rarest change was exaggeration, the commonest, diminution. The sensibility seemed to be more involved with the greater progress of the disease but the tactile sensibility was always found normal in remissions. It was more affected in states of agitation than in calm states and it was always normal in depressive forms with hypochondriacal ideas. The exaggeration or loss of sensibility was never observed in periods of calm, but diminution was observed in any state of the disease. The disturbances of touch are commonest in the expansive form and least common in the demented form. It was impossible to note any relation between the condition of touch and the habit, which many paralytics have, of pulling off the clothing. The alterations in the sense of touch in the first two periods of the disease were most often seen in patients with more marked motor troubles. Disturbances of touch have been found only in connection with alcoholism and syphilis, and were more frequent in alcoholic subjects than in syphilitic. A transitory anesthesia, preceding motor troubles, is the only alteration of sensibility of aid in the early diagnosis of general paralysis. Disturbances of touch seem to indicate, in the first period, that the progress of the disease will be neither hyperacute nor very long.

[10] Annales Med., Psych., April, 1898.
[11] Arch. de Neurol., Nov., 1898., March, 1899.

CONGENITAL PREDISPOSITION IN SEXUAL PERVERSIONS.

Féré [12] insists upon the importance of a congenital predisposition in the causation of perversions, and while he admits that accidental circumstances play an important rôle in the determination of the character that the perversion assumes, he believes that usually, when an accidental exciting cause alone seems to have given rise to the condition, there is probably a congenital predisposition. He states that every one is subjected repeatedly to the same causes that give rise to perversions in some individuals, or to precisely similar and quite as active causes, but that perversions arise only in those who are predisposed, and in whom the causes, therefore, become active. Féré reports a number of cases of perversion in which he was able to trace a distinct abnormal tendency in early infancy and childhood, even before actual perversions were manifest; and although the perversion seemed to follow a cause that was purely accidental and acquired, nevertheless, the history of these cases shows that the cause acted upon abnormally receptive individuals. As to the treatment of this condition, he says that anything that tends to cure it is allowable, whatever it may be; but that heterosexuality is abnormal in these individuals and not physiologic, and that the substitution of heterosexuality for homosexuality does not fulfil a physiologic function. He closes by saying that the ideal to be achieved in these anomalies is not to give pleasure from normal functions, but to lead the subjects to become continent.

MORAL INSANITY.

Müller,[13] after a very thorough review of the literature, attempts to give a clinical description of moral insanity. It is probably a congenital mental disturbance, the characteristic of which is the absence or diminution of the intellectual feelings and aims. In some cases the intellect is disturbed, and the patient is more or less of an imbecile; in others this does not appear to be the case, the patients having a high intellectual development. The symptoms appear in childhood, and are characterized by a peculiar lack of affection and obedience, a tendency to cruelty, a failure to perceive those elements of life which are commonly regarded as noble or beautiful. The patients have neither conscience in their conduct nor repentance for their misdeeds. They are egotistic, selfish and irritable. They often show in early life various forms of perversion, which do not disappear, but rather become more complex with growth. Often these patients have most fantastic ideas or fail to perceive error in their normal relations. Sometimes they are extremely credulous, nearly always showing marked tendency to mendacity and swindling. A curious feature is the skill with which they frequently defend or excuse their misdeeds. Left to themselves, they usually lead the life of vagabonds or tramps. Their crimes are often apparently

[12] Revue de Médecine, Nov., 1898.
[13] Archiv für Psychiat., xxxi, 325.

aimless; they steal not so much for the object stolen as for the perpetration of the act. Stigmata of degeneration are frequently present. The cause is generally supposed to be a tendency inherited from parents of neuropathic characteristics. It is possible, however, that diseases of the brain occurring in early childhood may be responsible for some instances. The diagnosis is to be made (1) by the fact that the changes are present in early youth; (2) the existence of a neuropathic ancestral condition; (3) the presence of certain characteristics that belong to the so-called hereditary degenerative insanities; (4) the existence of psychic or nervous anomalies; (5) the existence of certain deviations from the normal structure of the body; and (6) intellectual abnormalities. Physiologically, Müller concludes, with an approval of Berze's belief, that the condition is due either to an abnormally facile movement of the associations that interferes with the fixation of perceptions and ideas and is associated with imbecility, or an early development of the critical faculty that leads its possessors to deny authority, and, thereby, to lose the feeling of gratitude, filial affection, etc. The prognosis is usually unfavorable. The treatment consists essentially in the removal of such cases to suitable institutions, where they may be watched, and, as far as possible, improved by education. It must be remembered that when, under such circumstances, the patient apparently improves in character restoration to society is almost invariably followed by a relapse. The prophylaxis must begin with the parents. In general it may be said that if these are alcoholic, there is greater reason to expect moral insanity in the offspring.

THE MEDICO-LEGAL ASPECTS OF HYPNOTISM.

It is generally conceded that hypnotism is a pathological and not a physiological condition. When resorted to too frequently it is liable to bring on mental deterioration. It may lead to chronic headache and hysteria; it may induce an outbreak of insanity; in a few cases it has been directly or indirectly responsible for the death of the patient. The question whether the physician is justified in using a remedy that presents so many dangers to life in cases of diseases that are so little dangerous as are hysteria and neurasthenia, Kuh[14] answers emphatically in the negative. His experience has been that suggestion in the waking state is almost equally efficient. Hypnotism should be used as a therapeutic agent only when other methods of treatment and suggestion have failed. The question, Can the hypnotized fall victim to crime? has been answered affirmatively by those whose experiments were made in the laboratory, but forensically cases confirming this assertion are exceedingly rare. That the hypnotized can be used as a tool in the service of crime has been positively stated by those who have made experiments in the laboratory. From practical life, however, Kuh could find only one case in substantiation. The reasons why hypnotism is so rarely used for criminal purposes are that: (1) Not every person can be hypnotized even when willing; (2) not all suggestions are acceptable to the hypnotized, and those that are particularly distasteful to him or foreign to his habits and character are often rejected. Thus, Richet has published the following rather amusing example: One of his subjects, who allowed himself to be metamorphosed without difficulty into an officer, a sailor, etc., refused on the contrary, with tears in his eyes, to be changed into a priest, a refusal that the character and habits of the subject and the environment in which he had lived sufficiently explained. (3) There is in the majority of cases no blind, absolute obedience. The hypnotized may awake at any moment during the proceedings, and this is particularly liable to occur when his suspicions are aroused by anything that is going on around him, or if an inconvenient suggestion be given just before the time arrives at which the suggestion is to be executed; (4) complete loss of memory for what has been going on during hypnosis is not by any means a rule lacking exceptions; (5) finally, if all of these difficulties have been overcome, the way in which the criminal act would be executed would immediately suggest the existence of hypnotic influence. It would be an automaton that commits the crime, unconscious of antecedent and surrounding circumstances, and uninfluenced by the presence of witnesses or by any unforeseen event. The tool being supposedly devoid of all reasoning power in this state, it would be necessary to give such suggestions as would cover all possible contingencies that might arise during the commission of the crime; otherwise the deed would necessarily be done in a clumsy and impulsive manner. These are the principal reasons why hypnotism is so rarely used by the criminal classes. As to the responsibility of the hypnotized, if the possibility that the person was caused to commit the crime by hypnotism is acknowledged, then such a person must be considered irresponsible for his action, for hypnotism is a pathologic state in which the will-power of the subject is affected to a greater or less extent.

[14] American Journal of Medical Sciences, December, 1898.

FAMILY CARE OF THE INSANE IN RUSSIA.

Sparsky[15] has made an inquiry into the condition of the insane boarded out into the care of peasants in certain villages of Russia. The number thus boarded out has been 363 in three years, and at the end of that time 255 remained in the villages. The reasons for the return of a certain number of the patients to the asylum are very numerous. The commonest is a period of excitement, during which time it is impossible for peasants in poor circumstances to care for the patients in winter, where they have sometimes only a single habitable room. It is wholly exceptionable to send them back because of ill-treatment while under the care of the peasants or for abuse of alcohol. The diet was almost wholly vegetable, meat being served only once or twice during a fortnight, yet three-fourths of the patients were in an excellent state of nutrition and most of the rest were old persons. Two-fifths of the patients presented cases of terminal dementia; epilepsy, idiocy and other forms of dementia coming next in frequency. Most of the patients worked, aiding the peasants in the fields; they worked without being forced to do so, and their labor is so satisfactory to them that they do not desire to return to the asylum. Many patients are attached to their hosts, and *vice versa*. The patients are closely watched by a supervisor, who lives in the village; the physician comes once a week, the asylum being seven kilometres from one village and three from another. The sexual conditions are carefully watched. In three years there has been only one case of pregnancy in a patient and one attempt at rape on the part of a patient.

[15] Questions de Neurol. et de Psych. Med., vol. ii, p. 513, 1897.

THE ROLE OF AID SOCIETIES FOR THE INSANE.

Morel,[18] after commenting on the increasing and rapid development of public opinion regarding this question, and on the consequent activity of organized work in connection with it, divides his subject into the following heads: (1) What can be done for the lunatic *before* his removal to an institution? (2) *during* his period of seclusion? (3) the assistance of the family deprived of his support; (4) what ought to be done for a patient so far recovered that seclusion in an asylum is no longer necessary? (5) the development of public assistance; (6) the special education of children who have inherited tendencies to mental disease; (7) provision of special asylums for children of defective development and idiots; and (8) means of diminishing the causes which might predispose to insanity.

Dr. Morel considers that it is the duty of all charitable organizations to extend their patronage to the insane and their families; that suitable members should be set apart for visiting reported cases, and as far as possible for treating those for whom enforced seclusion is deemed unnecessary. In the case where seclusion is absolutely inevitable, the patient ought to be guided and watched over to the very doors of the asylum, and his family protected, helped, and, if need be, supported during the period of absence of the bread-winner out of the funds of the society or societies undertaking such work. Thus, keeping each patient well in sight during his seclusion, the society must be ready to take him by the hand immediately on his release, whether entirely or partially recovered, and to continue its good offices until he is once more able to resume his place as bread-winner and responsible member of the social community.

As necessary side issues of the main question, Dr. Morel advocates the establishment of special asylums for the development and education of those innocent victims of parental weaknesses who are yet capable of moral and mental training, and for the protection and care of such as are too hopelessly sunk in imbecility to need other than the usual bodily attention which their condition demands.

In conclusion, Dr. Morel sketches out a plan for the formation, organization and administration of a society having for chief object the duties marked out above, impressing on his readers the growing necessity for such societies in view of the steadily increasing attention given throughout all the countries of Europe to mental disease and its victims.

Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at the Academy of Medicine, in New York City, May 9, 10 and 11, 1899.

FIRST DAY.

The opening address was made by the President, Dr. Beverley Robinson, of New York, the title of which was

THE IDEAL PHYSICIAN — HIS CHARACTER AND ATTAINMENTS.

He referred to the noble example of the men whose portraits adorned the hall of the Academy of Medicine, in which the meeting was held. Their lofty character and superior attainments made them the leaders of men and medicine in their day and generation. He inveighed against the spirit of commercialism, and charged much of this to the invasion of specialism, for the general practitioner was and is ever cast in a different mold and has other purposes. Even though only few, comparatively, may have a sordid spirit, it should be discountenanced and banished. He exhorted his hearers to do their utmost, both individually and collectively, to elevate the social and scientific plane of their profession. They must be leaders in reform, not alone in sanitary and hygienic matters, but in everything that concerns the public good, whether in politics, morals or education. Their education must include the heart as well as the mind, and while not intruding on the domain of theology, the physician could and should minister to the soul as well as the body and cultivate sympathy with his patients. He cautioned against the undue influence of supposed scientific advances as against the results of one's own experience, and cautioned the physician not to allow his practical judgment to be overruled. He must direct the specialists' work and carefully provide that no narrow view be taken of the patient's ailments. In this way he will be of the greatest benefit to the patient and advance practical medicine. Laboratory work should be fostered, but the province of the clinician should not be ignored.

Dr. Vincent Y. Bowditch, of Boston, read a paper entitled

THE SUBSEQUENT HISTORIES OF "ARRESTED CASES" OF PHTHISIS TREATED AT THE SHARON SANITARIUM.

Dr. J. Edward Stubbert, of Liberty, N. Y.: I was very much interested in the paper of Dr. Bowditch, bearing, as it does, upon the curability of incipient cases of phthisis, and emphasizing the remarks made by another member of the Association in regard to the importance of nourishment *versus* climatic influence. I think the results obtained by Dr. Bowditch are very encouraging, especially when we bear in mind the fact that the work was carried on in a climate which is not considered particularly salubrious.

The temporary absence of bacilli in the sputum of tuberculous patients is well known. I have in mind at present a patient of Dr. Janeway's who has a large cavity in the upper portion of the left lung and a fibrous condition of the lower portion of the lung, in whose sputum the bacilli were absent for five weeks, although they were frequently searched for by three different examiners. It is not uncommon in my experience in incipient cases to get physical signs without being able to detect the presence of bacilli.

Even in sanitariums, special attention must be given to the complications of pulmonary tuberculosis: otherwise, such complications will handicap the patient and interfere with his recovery, even in the best of climates.

Dr. Newton: About half a year ago, my friend Dr. Stubbert sent a girl from the Loomis Sanitarium to her home at Montclair to die. She was suffering from advanced pulmonary tuberculosis. Since her return home, in spite of the fact that she has been living in very unhygienic surroundings in a tenement house, she has gained twelve pounds in weight and apparently is going to get well in spite of us.

[18] Pamphlet entitled, Quel doit être le Rôle du Patronage à l'égard des Aliénés? by Dr. Jules Morel.

DR. FRANCIS H. WILLIAMS, of Boston: I would like to ask Dr. Bowditch what his experience has been with the treatment of cases of pulmonary tuberculosis in the wards of a general hospital, during the limited time they are kept there, compared with the sanitarium cases. I have often been gratified to see such patients improve in a general hospital in a remarkable manner simply on the food and care such a hospital affords.

DR. BOWDITCH: Poorly nourished patients suffering from pulmonary tuberculosis who are admitted to a general hospital often improve temporarily, which is doubtless due to the better food and care they receive, but they cannot get the treatment there that they receive in a special hospital. They cannot get the same amount of fresh air that they would in a properly regulated sanitarium. If we could treat this class of patients by themselves in hospitals especially constructed for their use, we could do more for them even in the city.

DR. EDWARD R. BALDWIN, of Saranac Lake: I would like to say that the authorities at the Adirondack Sanitarium are in constant correspondence with 115 patients who have been discharged during the past ten years. Most of these are in fairly good health. Some have relapsed slightly, but the majority are able to reside at their old homes and resume their usual occupations.

DR. STUBBERT: I would like to ask what distinction Dr. Bowditch makes between arrested cases and apparently cured cases.

DR. BOWDITCH: I simply adopted the term "arrested" because I regarded it as a more appropriate term to apply to these cases than "cured," unless a long period has elapsed without a return of the symptoms. I apply it to every case where definite tuberculous symptoms have existed when cough, expectoration and fever have ceased and the general condition signifies a return to normal conditions, even though abnormal physical signs may persist indefinitely.

DR. FRANCIS H. WILLIAMS, of Boston, read a paper on

RÖNTGEN RAY EXAMINATIONS IN INCIPIENT PULMONARY TUBERCULOSIS.

He had examined about 165 cases of pulmonary tuberculosis with the x-rays. His static machine had four revolving plates, six feet in diameter, and four fixed plates, six feet, four inches in diameter. The author considered (1) cases with slight physical signs, but no râles; (2) those without physical signs, that is, whose lungs had been found normal by auscultation and percussion. It was shown in the second group of cases, five examinations with histories having been cited, that the x-ray examination gave warning of tuberculosis before any departure from the normal was obtained by auscultation and percussion. One reason for this is that if the density is much below the surface of the lung as in central pneumonia, its presence is not recognized by auscultation and percussion, but a shadow of the consolidated portion of the lung is cast on the fluorescent screen. The shadow is also cast by a slighter degree of congestion than can be revealed by auscultation and percussion. Dr. Williams has proven experimentally by shadow tests that a lung in pneumonia or tuberculosis if sufficiently diseased will offer ten times or more resistance to the x-rays than the healthy lung.

The x-ray examination enables the physician also to recognize some old or latent areas of tuberculosis which might otherwise be overlooked. Tuberculosis may be associated with bronchitis or emphysema and thus be more quickly recognized. Dr. Williams had had eight cases of the former and nine of the latter combination in which the diagnosis was corroborated by the discovery of tubercle bacilli.

Dr. Williams rightly claimed that we have in the fluorescent screen a more ready, convenient and delicate method of recognizing an abnormal condition of the lung than we have in x-ray photographs, and the screen has the advantage of revealing the mobility of the diaphragm and the heart.

DR. KNIGHT: I have had the opportunity of examining quite a number of Dr. Williams's cases, and in many of them, although I could find no physical signs by auscultation or percussion, the rays revealed signs of incipient tuberculosis. The fact should be borne in mind that physical signs of consolidation should not be looked for at a very early stage of the disease. I see patients for months in whom I can find distinct localized catarrhal signs without any signs of consolidation or any change in the percussion note. I hope that men who have had practical experience with the Röntgen rays in this connection will continue the discussion.

DR. STUBBERT: I was interested in listening to Dr. Williams's paper and comparing his remarks with those made last year. This comparison shows conclusively that satisfactory progress is being made from month to month in this field of research, and it is apparent that nothing in the treatment or diagnosis of pulmonary tuberculosis has made such great strides recently as the use of the x-rays, especially in diagnosing incipient cases. Another point of interest is the relative value of the fluoroscope and the fluorescent screen. Last year I stated that I had abandoned almost entirely the use of the former for the latter; since then I have not used the fluoroscope in more than three or four cases, as a screen gives a much better picture.

Dr. Williams's remarks have strengthened me in my belief that radiographs are not satisfactory. I have never been able to successfully photograph an incipient infiltration in the lung, and others have had the same experience.

I am fully in accord with the statement which has been made that the use of the x-rays should be invoked in every doubtful case of pulmonary tuberculosis. As Dr. Otis has said, we cannot depend absolutely upon tuberculin. The peculiarities of the patient may mask the diagnosis. I have yet to see an incipient case that could not be accurately diagnosed by means of x-rays. We may sometimes be misled by a slight thickening of the pleura at the apex, but this occurs very rarely, and such a condition probably cannot exist without some slight underlying morbid process of the lung. The x-rays are also valuable in cases where there are scattered foci throughout the lung, which on account of their smallness do not yield physical signs. These cases can be very accurately diagnosed and the area definitely mapped out by means of the fluorescent screen.

I was also interested in what has been said regarding the use of the x-rays in emphysema and bronchitis. In the former, very definite physical signs have been obtained, but in bronchitis we have not been able to do anything with them.

DR. LANGMAID: I am astonished at the limitation

of the movement of the diaphragm with such slight abnormal conditions of the lung. I never suspected it before.

Dr. Williams: In nearly, if not quite, all of the cases to which I referred in my paper there were no râles. As regards the value of x-ray photographs in comparison with the fluorescent screen, thus far, in my experience, the latter will detect many abnormal conditions earlier and better than the former. I also regard the fluorescent screen as superior to the fluoroscope.

Dr. S. G. Bonney, of Denver, read a paper entitled

SUGGESTIONS CONCERNING EARLY DIAGNOSIS IN PULMONARY TUBERCULOSIS.

He analyzed his recorded cases, numbering 546, seen in private practice and continued under observation for a considerable period in Colorado, although contracted elsewhere. Seventy-one per cent. of these arrived in that State with distinct evidences of tubercular infection in each lung; 19.2 per cent. had well defined cavities. The average time of delay in the cases was a little over eighteen months; 20.2 per cent. presented the history of a sudden hemorrhage as the first symptom distinctly referable to the disease.

The thorough and painstaking examination of the chest immediately upon the development of suspicious symptoms, and its frequent repetition if necessary, will usually suffice through the detailed application of the principles of auscultation and percussion, in establishing for clinical purposes a sufficiently early diagnosis. As a matter of fact, such an examination is seldom made until a provisional diagnosis has become apparent from the rational symptoms, and the consultant at once recognizes physical evidences of advanced infection. Is it not, then, of practical importance, prefatory to a consideration of the more recent aids to the recognition of consumption, to continue to emphasize a more strict and conscientious adherence to the principles of physical diagnosis now admittedly ignored in so many instances? Apropos of this I would especially condemn:

(1) Delay in instituting any physical examination whatever until long after the development of pronounced constitutional and pulmonary impairment.

(2) Failure to examine on the bare skin, the presence of clothing effectually preventing any approach to accurate results.

(3) Neglect to examine the entire chest, the bases, interscapular spaces, and axillary regions being frequently overlooked.

I would deplore particularly the existence of:

(1) Erroneous conceptions concerning the significance of the absence of percussion-dulness at the apices, an active process often being capable of recognition by ausculation considerably before the evidences of consolidation are apparent.

(2) The non-recognition, in the absence of râles, of the various modifications in disease of the normal respiratory sounds.

(3) Inaccurate interpretation of localized diminished intensity of auscultatory sounds, elevation of pitch, harshness of quality, and prolongation of expiration.

I would severely criticise:

(1) Failure to utilize cough preceding forced inspiration in eliciting the presence of slight moisture in the finer tubes.

(2) The non-appreciation of the almost pathognomonic significance of a circumscribed bronchiolitis, even in the absence of dulness or other auscultatory signs.

Dr. Frederick I. Knight, of Boston: I wish to repeat here the statement which I made in my remarks on this subject last year, namely, that the early diagnosis of pulmonary tuberculosis should not be made for the sake of sending your patient to Colorado or anywhere else, but that it should be made in order that the proper treatment may be instituted at once.

In regard to the presence of bacilli in the sputum in the earlier stages of the disease, I must say that my experience rather differs from that of Dr. Bonney. I have very rarely failed to find the bacilli in the sputum of patients who present themselves to me, and I see many cases early in the course of the disease. It is true that they are patients with cough, and usually with a little expectoration. The tubercular disease that develops without cough naturally falls into the hands of the general practitioner.

According to Dr. Bonney's statistics, the hemorrhagic cases are the ones which delay longest before going to Colorado. This is interesting, and is in line with the pretty generally admitted fact that those cases pursue a longer and usually a more favorable course than the other types of the disease. They for a long time may complain of very little cough or expectoration, and the disturbances of their general condition is not severe enough, in their opinion, to oblige them to consult a physician or adopt any radical measures of treatment.

Dr. John O. Roe, of Rochester: There is one diagnostic feature in connection with this subject which I consider one of the most important and which has been overlooked. I refer to a laryngoscopic examination, which I think should be made in every case of suspected incipient pulmonary tuberculosis. I quite agree with Dr. Knight that the bacilli may usually be found at a very early stage of the disease; in fact long before you can detect any marked physical signs, and even prior to this the laryngoscope will reveal a condition of the larynx which, to the skilled laryngologist, will indicate the presence of incipient pulmonary tuberculosis. The changes in the larynx are characterized by an anemic condition of the mucous membrane, due to interference with the circulation of the parts, and indicating pulmonary involvement.

Dr. R. H. Babcock, of Chicago: Dr. Bonney's paper was so complete that it would seem as if there was hardly room for anything more than favorable comment upon it. Nevertheless, I should like to speak of what struck me particularly, and that is the very large percentage of his cases, namely, 71 per cent., who had been kept at home for varying periods before they were sent away for climatic treatment. The doctor's conclusions were that these cases remained at home chiefly or largely because of delayed diagnosis. That unquestionably is a correct conclusion in many of them, but is it a legitimate one in regard to all of them? Is it not true that a very large number of patients are kept at home in the care of the family physician for some ulterior motive than the patient's good? Is it not true that many are kept at home because the family practitioner does not wish to lose sight of the case? This perhaps is a very pessimistic view of the matter, and attributes to the rank

and file of the profession methods which are unworthy, and perhaps I should apologize to the profession for even insinuating so much, but I believe it is impossible for the rank and file of the profession, no matter how ignorant they are about physical diagnosis, to keep those patients under their care for eighteen months without recognizing their true condition.

Another motive, which is not an unworthy one, is the belief on the part of the attending physician that his patient will improve at home under proper treatment, and that it is unnecessary to send him away. If that is the reason for the delay, then the 388 cases mentioned by Dr. Bonney furnish a striking commentary on the incorrectness of such an opinion. For my part, I insist upon the importance of an early diagnosis for the very purpose of sending the patient away to Colorado. I believe so sincerely that a change of climate will restore such patients in the incipiency of the disease that as soon as I recognize a case in its beginning, I promptly advise such patients to go away. If that advice cannot be followed, then some other advice is given.

In the early diagnosis of pulmonary tuberculosis, I should like to dwell on the importance of temperature. A study of the temperature should never be neglected. We all see cases where the early diagnosis of the disease is difficult on account of the vagueness of the physical signs. There may not be a rise of temperature in all cases, but there is so apt to be a slight rise, perhaps only of one degree, that if the temperature is studied carefully for a week or more, the physician can usually come to a correct conclusion.

I am not a laryngologist, but I must say that I am sceptical about the statement just made that a careful laryngoscopic examination will anticipate a diagnosis of pulmonary disease before it can be detected in the lungs. I have friends at home whom I know are skilful laryngologists, and I have so often called on them to help me out that I cannot believe their failure to recognize a change in the larynx was due to ignorance, but rather that such changes were not there. I have sent patients with incipient disease of one or both apices to laryngologists, and the statement came back that the larynx was practically healthy.

In regard to the significance of hemoptyses, I should like to say that I believe they are nearly always the precursors of pulmonary disease or due to it.

DR. R. G. CURTIN, of Philadelphia: — I believe that ofttimes the main reason why patients are not sent away from home is that they are not ready to go. They may not at first have the means to go away; later on, when the symptoms become more aggravated, the necessary funds may be supplied by their relatives or friends. Other patients are not disposed to leave home, or are afraid of getting homesick. Often it requires six months or a year before such a patient can make up his mind to leave his home.

DR. RICHARD C. NEWTON, of Montclair: — In confirmation of what Dr. Babcock has just said about laryngeal phthisis, I believe the fact is generally admitted — for which we should thank heaven — that it is a comparatively rare, although a distressing, intractable and, in fact, a well-nigh hopeless phase of consumption.

DR. ROE: — The examiner must make the distinction between a tuberculous laryngitis and the laryngitis of tuberculosis.

DR. E. FLETCHER INGALS, of Chicago: — I agree with the statement made by Dr. Roe that even in the very early stages of pulmonary tuberculosis the larynx often presents an appearance which the man who frequently examines that organ will recognize as tubercular. There is a pallor or an atrophic condition of the larynx which leads him to believe that the patient is tuberculous.

I think that the plan of telling your patient to go away as soon as you find out that he has tuberculosis is a mistake. The first thing is to find out is he can go away; if he has money or if his friends can send him. It is cruel to tell him that he must go away before you know that he is able to do so.

DR. C. F. MCGAHAN, of Aiken, S. C.: — I agree with Dr. Roe that an examination of the larynx if often of great value in the early diagnosis of these cases. It is my custom to examine the larynx in all of my cases, and I have now a patient under observation where the larynx is suggestive of tuberculosis, although I can find nothing in the lungs.

DR. E. O. OTIS, of Boston: — Dr. Bonney, in his paper, emphasized the importance of the inherited susceptibility of the patient in the acquirement of pulmonary tuberculosis. In connection with that, I think the question of exposure to the disease should be carefully investigated in each case. Last year, Dr. Loomis, in a valuable paper before this Association, spoke of two other factors in making an early diagnosis, namely, the vital capacity of the individual, as determined by the spirometer, and the lowered arterial tension. These I believe, will often give us valuable indications in making an early diagnosis.

DR. PHILLIPS: — I would like to inquire whether any of the members have noticed a sub-normal temperature in tuberculous patients? In the incipient stage of the disease it seems to me that is almost of as common occurrence as a slight rise in temperature.

DR. KNIGHT: — There is one point in regard to the larynx which should be brought out. I think all laryngologists agree that in incipient pulmonary tuberculosis the larynx may have a suspicious appearance — not an ulcerated condition, but a certain indefinite appearance which has hitherto been not fully described and which Dr. Roe can perhaps describe to us more in detail.

DR. BABCOCK: — I was only expressing some scepticism concerning the doctor's statement that the appearance of the larnyx sometimes indicated pulmonary tuberculosis before an examination of the lungs would show it. I do not question for a moment that the appearance of the larnyx is significant when pulmonary changes are present, but I was surprised that the larynx should indicate pulmonary tuberculosis at so early a stage that careful examination of the lungs would not reveal the presence of the disease.

DR. ROE: — I did not say it was indicative of pulmonary tuberculosis, or at least, what I meant to say was that it was indicative of approaching trouble in the lungs.

DR. ROBERT H. BABCOCK, of Chicago, read a paper on

HIGH ALTITUDE AND HEART DISEASE WITH REPORT OF CASES.

The author reported nine cases in full. Case I was an instance of mitral stenosis, and Case VII of aortic

constriction. In both an unyielding barrier to the blood-flow existed, and time had to be allowed for the stream to pass the point of obstruction. In stenosis, systole is slow and forcible so long as compensation is adequate. Acceleration of the circulation at high altitudes would quicken cardiac contractions; with the shortening of systole time would not be allowed for complete emptying of the chambers back of the constriction; stasis in the pulmonary vessels would be promoted, with corresponding dyspnea that might readily grow urgent on exercise.

Conclusions.— (1) All forms of cardiac disease do not contraindicate sojourn at a high altitude.

(2) The ill-effects of low atmospheric pressure in some forms of cardiac disease are explicable on the hypothesis of acceleration of venous flow and corresponding quickening of the heart beats.

(3) Consequently those forms with which high altitude is likely to prove incompatible are pronounced aortic or mitral stenosis, and regurgitant disease when complicated by pleural and pericardial adhesions.

(4) On the other hand, patients with uncomplicated regurgitant lesions, or arterio-sclerosis, with or without myocardial changes, may endure low atmospheric pressure without injury.

(To be continued.)

Recent Literature.

The Philosophy of Memory and other Essays. By D. T. Smith, M.D., Lecturer on Medical Jurisprudence in the University of Louisville. Pp. 203. Louisville: Press of John P. Morton & Company. 1899.

This small volume, admirably printed on excellent paper, is a series of essays, only one of which, that on Memory, has any claim to consideration from a medical point of view. The book is merely an expression of the thought and the theories of its author. The Essay on Memory deals with anatomy and psychology, but with neither in a fundamental way. To certain readers, the book will, no doubt, prove suggestive, but it is hardly to be regarded as a significant addition to our knowledge of the subjects of which it treats.

Hay-Fever and its Successful Treatment. By W. C. Hollopeter, A.M., M.D. Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

In this second edition the author has enlarged the special treatment for the various types of cases, and brought the bibliography up to date. The great difference in opinion on the etiology of hay-fever is briefly outlined by well-selected short references. The author's local treatment consists essentially in thorough cleansing of the nares with Dobell's and similar solutions, followed by drying and applications of oily solutions, which when necessary is supplemented by careful general treatment.

Compulsory Vaccination in Japan. — The Japanese government has recently decreed that vaccination and revaccination be compulsory. Children must be vaccinated before the tenth month, and revaccinated at six, and again at twelve years of age.

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PROF. ROBERT W. E. BUNSEN.

The death of Professor Bunsen, which occurred August 16th, at Heidelberg, has removed another of the master-minds of Germany. Original scientific investigation has suffered severely in the last few years through the deaths of Pasteur, Helmholz, Du Bois Reymond, and now of Bunsen. Such men cannot be replaced, nor, fortunately for the world, can their work be destroyed.

Although Bunsen was not primarily interested in medicine, yet his special fields of research, physics and, notably, chemistry, are coming into closer and closer relation with medical science. We may, in the near future, surely look to chemistry for some of the most striking advances in medical knowledge. It is of interest also to note that like Helmholz, in the invention of the opthalmoscope, so Bunsen has done an inestimable service to medicine in his work on electricity, the properties of certain metallic compounds, and spectrum analysis. His first chemical work was the discovery of an antidote for arsenic. This he accomplished in his twenty-third year. Born in 1811, he spent about twenty years after receiving his degree in various German universities as tutor and professor, and finally, in 1852, went to Heidelberg, where he remained until his death. While at Heidelberg he had built a chemical laboratory, which became, under his direction, one of the most celebrated schools of chemistry in the world. He was a prolific writer on scientific subjects, chiefly connected with chemistry; particularly original was his work on spectrum analysis, which, though indirectly, is coming to have a closer and closer bearing upon certain branches of medicine, in connection, for example, with microphotography. In the course of his life he invented some of the most valuable adjuncts of a laboratory, the Bunsen burner being still probably the most indispensable in the hands of a chemist. The battery, photometer and pump known by his name are hardly less useful. It is always interesting to observe how, with all the modern tendency toward specialism, there is likewise a

growing appreciation of the interrelation of the great fundamental sciences. As medicine becomes more of a science as a branch of biology we may look for a constantly increasing dependence of the peculiar problems which medicine offers for solution, upon the allied sciences, and, conspicuously, upon chemistry. Men like Bunsen do much to hasten this hoped-for day.

A STATISTICAL STUDY OF THE RELATION BETWEEN WEATHER AND CRIME.

THAT climate has a certain bearing upon the character of individuals and races has long been appreciated. We recognize, for example, as a race characteristic the active, hardy, unemotional attributes of the northern peoples, as contrasted with the easy-going, sentimental traits of those living in countries further south. These bare facts might suggest to the lover of the statistical method a possible prolific field for research in the study of effects of varying climatic conditions on the characters of persons living in the same locality. Such an investigation has been undertaken by Edwin G. Dexter, and the results of his work published in a recent number of *Science*.

Dexter has attempted to ascertain what bearing certain misdemeanors and other data of conduct have in relation to definite weather conditions. To accomplish this end, through the New York Branch of the United States Weather Bureau, 3,650 days were tabulated as to their prevailing characteristics, whether fair, partly cloudy, rainy or clear, and also as regards temperature, humidity and wind. Armed with these data, Dexter has collected for the same period of time, from records available in New York City, upwards of 400,000 facts; misdemeanors, ranging from assault and battery and suicide to errors made by bank clerks and strength tests in Columbia University. Comparing the characters of the day with the nature of the crime or physical state of the individual, conclusions of interest are reached, affording at least the basis for a valuable sociological study. The following are some of the points learned from a reduction of the double set of data to percentages: "Moderately high temperatures were found to be accompanied by excess in all the misdemeanors considered; low temperatures by deficiencies. The temperature group 80–85° showing an excess of 68 per cent. for assault by males and 100 per cent. for those by females. The next higher group, however, shows a drop to 33 per cent. excess for the former, and an efficiency of 33 per cent. for the latter. This sudden falling off for conditions of intense heat is shown for nearly all classes of data, and is undoubtedly due to the fact that under such temperature there is little energy available for offensive conduct. Death, suicide and the recorded errors in banks alone remain excessive under such conditions.

"The study of humidity in its effect upon the data of conduct gave some interesting results, since it demonstrated beyond a doubt that conditions of low humidity are those most productive of misdemeanor. When we consider that the muggy, sticky days on which we feel it our natural prerogative to be 'out of sorts' are of the opposite character this is quite surprising. The deficiency of disorders on such days is, however, undoubtedly due to the fact that although they are emotionally depressing they are also physically weakening, and however 'ugly' a man might feel, if energy were lacking to be offensively active, the police-court is none the wiser, and the fact is lost to our study."

Further study of the statistics shows that misdemeanors are more frequent upon days we are accustomed to consider agreeable. Suicide is found, contrary to the generally accepted idea, to be more frequent upon pleasant days in May and June.

"Perhaps the most interesting general conclusion to be drawn from the study is that during those meteorological states which are physically exhilarating, excesses in deportment, in the ordinarily accepted sense of the word, prevail to an abnormal extent, while death and irregularities in mental processes (errors in banks) are below expectancy. During such weather conditions, without doubt the quality of the emotional state is more positive than under the reverse conditions, but the results seem to show that in the long run an excess of energy is a more dangerous thing, at least from the standpoint of the police-court, than the worst sort of a temper with no energy."

The value of such work as the foregoing is unquestioned; still we cannot but feel that it is a statistical problem of very unusual difficulty, and one requiring more data than here presented to be convincing. For example, the questions of environment and race, together with the whole category of personal characteristics, seem to have been left unregarded, excepting for a general classification into groups. Places where crimes are committed must also be a source of error in such statistics. Weather conditions would hardly have the same effect in the city as in the country, or in a dark tenement as in the open air. Evidently, therefore, there are numerous sources of error, if only the crime and the weather conditions are considered; nevertheless, the general results are of value, and no doubt will prove the starting point for other and more detailed investigations.

RAINSFORD ISLAND.

THE recent fires at Rainsford Island, which the evidence goes to show were of incendiary origin, must force upon us both the dangers and the difficulties in the administration of an institution of that character. It is a reformatory for boys, which means that its inmates are of a class to be regarded with suspicion and watched with care. If they may be reformed, so much the better, but in the meantime they must be regarded as an abnormal class whose best interests demand the closest surveillance. The wholesale destruction of property which was intended and partly accomplished is a danger to which such an institution must always

be exposed, and against which it must be most rigidly guarded. Recent events go to show that some of our boldest and most desperate criminals are boys under twenty; call them pathological, or degenerate, or the victims of circumstances as you will, the fact remains. This attempt at Rainsford Island. if it prove to be a deliberate plan on the part of certain inmates, means that discipline and not sentiment should prevail, and that everything should be done to uphold the present administration of the island in its efforts to establish a firm rule over its troublesome wards. This the city owes to itself and to its appointed guardians of this particular city institution.

MEDICAL NOTES.

CENTENNIAL CELEBRATION AT LEIPSIC. — The surgical clinic at Leipsic will have a centennial celebration in October, when a bust of Professor Thiersch will be unveiled.

PROFESSOR SANARELLI NOT TO VISIT AMERICA. — It has been generally reported that Prof. Sanarelli was about to visit America, for the purpose of continuing his investigations on yellow fever. We learn from the *Medical News* that this rumor has no foundation in fact, and that he has no present intention of visiting America.

YELLOW FEVER AT SANTIAGO AND HAVANA. — It is reported that a case of yellow fever has occurred at Christo, whither headquarters have been removed, in the neighborhood of Santiago and is the first at that place. Of late the quarantine rules have been relaxed, owing to the fact that there have been no new cases in the city, and officers from headquarters have been in the habit of coming to Santiago daily, returning to headquarters at night. There are no cases among the troops at Havana.

AN EXPENSIVE CRIMINAL FAMILY. — We learn from the *Medical News* that Ada Zurke, who was born in Germany in 1740 and died in 1800, was a confirmed drunkard. Prof. Pellmann, of the University of Bonn, discovered and identified 709 of her descendants. Seven of these were convicted of assassination and 76 others of different crimes, while 144 were professional beggars, 61 lived on public charity, and 181 were prostitutes. Altogether, the cost to the German government of watching, pursuing, trying, and boarding the members of this family has been more than a million and a quarter dollars.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, August 23, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 44, scarlet fever 16, measles 3, typhoid fever 32, small pox 1.

FIRES AT RAINSFORD ISLAND. — Within ten days two fires have occurred at the reformatory for boys on Rainsford Island. Through vigorous efforts on the part of the officers of the island and others, the first was quickly extinguished with slight loss. The second fire, a few days later, originating in the same place, proved more stubborn, and was not brought under control until a large part of one building had been destroyed, entailing a considerable money-loss. The fires are supposed to have been of incendiary origin, started by inmates.

NEW YORK.

PUBLIC FUNDS FOR SUPPORT OF PRIVATE CHARITIES. — In a communication to Controller Coler, expressing approval of the latter's determination to cut down the appropriation of public funds for the support of private charities, the State Charities Aid Association points out that a number of these institutions are almost wholly maintained by the city, and that the appropriations tend to discourage private benevolence. The statement is made that there are now 282 institutions, which receive annually no less than $3,249,623. The Association advises that the custom of appropriating money for such institutions should be entirely abolished, and that all appropriations for charitable purposes should be devoted to the development and support of the municipal charities. Inasmuch, however, as the present system cannot be discontinued at once without causing considerable disturbance and hardship, it is recommended that a gradual reduction in the amounts given to private institutions be carried out, and that this reform be first applied to the per capita payments for inmates, the expense of whose maintenance in all instances, it is declared, is much greater than for the inmates of the city institutions. It is furthermore recommended that the city should in no case make payment to private institutions until after a thorough investigation, and that expenditures for private charities be provided for in the regular budget, and not out of the excise moneys.

A BABY FARM CONDEMNED. — On information furnished by the Society for the Prevention of Cruelty to Children, a woman was, on August 15th, found guilty of maintaining an authorized "baby farm," and sentenced in the Court of Special Sessions to a year's imprisonment. It was shown that three infants had died within a period of three weeks, and Dr Sinclair, of Lexington Avenue, testified that the children in her establishment were in a very bad state of filth and neglect.

A CREMATORY FOR NYACK. — The Nyack rural cemetery, twenty-three acres in extent and situated a mile and a half back of Nyack, on the Hudson, has been purchased by a New York syndicate, which purposes to establish a crematory in which liquefied air is to be utilized to furnish a supply of oxygen much greater than is possible by any process hitherto employed. The furnace used will be an electric one, and it is claimed that by this new process the incineration of a body can be accomplished in a few minutes by the intense heat evolved. One of the principal objections

to cremation, the long time required for the process, will thus be removed.

DEATH WHILE UNDER TREATMENT OF A CHRISTIAN SCIENTIST. — John Allan Campbell, who is represented as having been a Christian Scientist of the highest sphere, died recently, after having been treated until within a few hours of dissolution by members of his sect. When it became evident that death was near a physician was called in, no doubt for the purpose of signing the certificate for the health department, but the physician very properly placed the case in the coroner's hands. The autopsy made by the coroner's physician, Dr. Donlin, showed that the patient was affected with acute pleurisy, with effusion, cerebral congestion and cardiac hypertrophy and dilatation.

A FATAL CASE OF POLIOMYELITIS. — A child four years and nine months old died on August 15th at Poughkeepsie, of infantile paralysis, after a very brief illness. This is the first fatal case that has occurred there, and the attack is said to have been ushered in by convulsions which appeared to be due to a large quantity of watermelon which the child had taken.

Miscellany.

A PROGRESSIVE OPINION.

THE *Medical News* heads the following excerpt from a recent editorial in the *Medical Times*, a homeopathic journal, "A Step in the Right Direction," an opinion which we would most cordially endorse:

"However valid may have been the reason in the early days of the homeopathic school for identifying its institutions with a distinctive sectarian name, it is a matter worthy of the most careful consideration, if, in the present advanced and ever-advancing state of medical thought, when the most accurate scientific tests are being applied honestly and faithfully to every principle in medicine, and to every new thought developed in the wide range of studies connected with our profession, the retention of that name in our colleges and hospitals does not retard their influence and create in the minds of scores of students in after years a feeling of regret that in a profession ever broadening in its scope and becoming more and more a unit in its work, their diploma, in name at least, is a distinct sectarian one, and out of tune with that broader liberty which looks upon the whole world as its own. There is no disputing the fact, for the records are open to all, that every year many, very many physicians on whose diplomas the name eclectic or homeopathic appears seek and obtain from other colleges a non-sectarian degree, in which no pledge is required or implied of adherence to any one dogma, and giving perfect liberty for that freedom of action based upon a careful education and mature thought. At the commencement of the Cleveland College of Physicians and Surgeons last month, no less than fifteen homeopathic physicians secured the diploma of the college after having spent the winter in study."

THE DETERMINATION OF SOUND DIRECTION.

THE function attributed to the semicircular canals in respect of the determination of the direction of sound has been gradually undermined, and is now more or less discredited. The nature of the mechanism by which the source of origin of a given sound is perceived, therefore, still remains to be explained. There is reason to believe that the appreciation of direction is, *mutatis mutandis*, very analogous to the phenomenon of stereoscopic vision, that is to say, it is in virtue of certain subtle modifications of sound as perceived by both ears that we learn to diagnose direction, just as the slightly inaccurate superposition of two visual images gives the sensation of projection. In the course of a long series of observations carried out at the Yale laboratory it was found that as a matter of fact the sense of direction is remarkably accurate, a blindfolded subject making only 113 out of 656 possible errors. It was noted that the sounds of the right hemisphere were more accurately perceived than those of the left, those from the front more than those from the rear, and those from below more than those from above, variations which are probably due to the shape and direction of the pinna, and to the difference in the functional acuity of the two ears. Distance is estimated merely by the absolute intensity of the sound, but direction is gauged, according to Matsumato, by the relative difference between the intensities of the component sounds as heard by the two ears. This is such a delicate process that a ventriloquist can, by directing the attention of his audience to a given spot other than the actual source of the sound, and by certain studied modifications of the sound emitted, mislead the judgment into overruling the impressions on the sensorium of the observer and give rise to an absolutely false perception. There remains the fact that in certain atmospheric conditions, notably in fog, the sense of direction is greatly modified, and even lost, as sailors know to their cost. This fact would tend to show that senses other than hearing are concerned in completing the impression or at any rate in confirming or disproving the deductions based thereupon. — *Medical Press and Circular.*

SANITARY CONDITIONS IN THE CAMPS AT SAN FRANCISCO.

IN view of the scandals circulated about the condition and management of Camp Wykoff, Long Island, where the troops which took part in the Santiago campaign were taken at the close of the Spanish war, the report of Colonel Greenleaf, Medical Inspector of the Army, in regard to the camp established at the Presidio of San Francisco for the reception of the volunteer troops returning from the Philippines, is of more than ordinary interest and importance. The report, in part, is as follows:

This camp is now occupied by three regiments, the 3d Oregon, 1st Nebraska and 10th Pennsylvania, and the Utah Battery, aggregating about 3,500 men, the infantry regiments being in the section on the north side of the railway track and the artillery on the south side. The general health of the men is excellent, the sick report, exclusive of cases that were placed in the hospital immediately after arrival being 4.6 per cent. of the effective force and made up of such trivial ailments as mild affections of the air passages, indigestion, rheumatism, etc.

The fears that were entertained of serious illness owing to the climate and the scantily clad condition of the men have not been realized. Many of the men had thick clothing on arrival, and those who had none borrowed from their more fortunate comrades. Nearly all have observed the precautionary directions against exposure, and the comfortably heated quarters have given them shelter and lounging places when off duty.

The sanitary corps (civilian employés) has kept the latrine troughs, garbage and waste cans in excellent order, and the urine tubs, placed each night in the company streets have freed the camp-ground from defilement of this nature. The trough system for latrines is a perfect success, and these places, instead of being noisome sights, are now the show-places of the camps, the houses and their surroundings being neat and clean in appearance and entirely free from bad odor. Indeed, there is nothing about them that can offend the senses of sight or smell. The interior police of the camp of the 2d Oregon is not good. Kitchens, dining-rooms, bath-houses and lavatories are not kept tidy or clean, in spite of the orders reiterated each day by the colonel of the regiment.

The contrast between the work of the scavengers at the latrines and about the garbage cans with that of the soldier police in the quarters, kitchens and dining-rooms is very marked and fully sustains the opinion previously expressed in my reports, that the untrained soldier cannot be made to do the work of a scavenger, to which I must add, nor can he be made to keep himself or his surroundings clean. The food supply is abundant, well prepared, cooked and served. There is added to each one hundred of the regular rations twelve and one-half gallons of milk, ten pounds of butter and ten dozen eggs; this is furnished by the subsistence department under the act of Congress approved March 3, 1899, for "issues to enlisted men in camp during the periods of recovery from low conditions of health consequent upon service in unhealthy regions or in debilitating climates." It may truthfully be said that the food in this camp is much better in variety, quality and preparation than is found in the average hotel anywhere in this country. The medical records of the 2d Oregon Volunteer Regiment are in excellent condition; better, in fact, than any other volunteer regiment I have seen at muster out. I have not yet examined the records of the other regiments here. The medical and hospital property of this regiment has been transferred to the supply depot in San Francisco, and the regimental hospital furnished from the general camp supply I had furnished provided for the troops.

The detention camp at Angel Island is so far completed that one regiment can be accommodated at any time. The hospitals for contagious and non-contagious diseases are in position and equipped, a medical officer and detail of hospital corps men is on the ground, and a common dispensary is ready for service. Fortunately up to this date there has been no occasion to place any of the incoming transports in quarantine, and therefore the camp has not been used.

These camps of recruits have an occupancy of about 4,000 men, although this number changes from day to day, as transports leave for the Philippines and recruits come in from the east; the general health of the men is excellent, the sick report showing an average percentage of 5.8, of which 33 per cent. is vaccinia, 10 per cent. malarial in men who have had previous service in Cuba, and the remainder rheumatism, indigestion, venereal, etc. Boards of medical officers are in session for re-examination of the physical condition of the men who arrive, and many have been rejected; the exact percentage I have not been able to ascertain, but it is large enough to show that sufficient care is not yet exercised in the selection of recruits, especially for service in the tropics.

Four cases of typhoid fever have been taken from the general hospital from these camps, the history of each one of which I studied carefully as soon as it was reported, and all gave evidence of importation. Precautionary disinfection in the camp latrines has, however, been thoroughly practised, and I think there is no danger of this disease gaining any foothold. In order that errors in diagnosis may be avoided, medical officers are instructed to make careful study of all fever cases. Advantage was taken of the occurrence of these cases to introduce the trough system of latrines, and to do away with the dry earth-box system previously in use. The change will be completed in a short time. The urine tubs are in use in these camps also.

Complaint having been made of the presence of vermin in the bedding and clothing of some of the men, I had large caldrons for boiling water put up in the camps into which material so infected was ordered to be placed; these caldrons when not so used supply hot water for the laundering of the clothing of the men, galvanized iron wash-tubs having been furnished for this purpose. The food of the recruits is ample in quantity, but has little variety beyond the regular ration; it is fairly well cooked but indifferently served; mess tables had to be made from any lumber that was available in the two older camps, but in the new camp they were furnished with buildings. The latrines, garbage cans, etc., are emptied by men of the sanitary corps, and the kitchens, tents, etc., are policed by soldiers. There is a great difference in the cleanliness of these and the volunteer camps; here the police work of the recruits, under direction of regular officers, is well and thoroughly done, the kitchens and cooking utensils, the tents and the company streets being kept in excellent order.

All outgoing transports while in dock preparing for the voyage are carefully inspected by the medical superintendent, and immediately before sailing I also inspect them. In every instance they have been found in good condition. Before loading, estimates of troop capacity are made, with a view of securing proper air space, and assignments of troops are made in accordance with these estimates; the facilities for latrines, urinals, lavatories and baths are ample, and all are in good working order before starting. The capacity of the ships' galleys for cooking is determined, and when necessary extra galleys for troop service are put in. Fresh air is introduced between decks by wind sails, and electric fans keep it in motion. Ample ice-chest and cold-storage room is furnished, and the water supply and apparatus for replenishing it is tested. The question of substituting troughs for water-closets is being considered, since it has been found that the latter get out of order easily and do not work satisfactorily on long voyages with troops.

Correspondence.

AN INTERESTING TESTIMONIAL.

Brookline, Mass., August 16, 1899.

Mr. Editor: Among some papers of my grandfather I have come across a testimonial written, I think, by Dr. Waterhouse for one Martha Battles, expressing thanks for care received by her at the Massachusetts General Hospital as long ago as the year 1836.

It possesses some interest from its quaint phraseology and also historically as an early endorsement of the hospital, and therefore I send a copy of it to you for publication, if you think best.

Walter Channing.

Following is the testimonial:

"Dr. and Mrs. Waterhouse with Martha Battles thus express their thanks to Dr. Channing for his considerate, and successful attention to her, while under his care in the Hospital: — nor ought she to with hold the like expression of gratitude from Dr. Wyman, and the faithful Nurses.

"The extreme neatness-order-quiet and decorum of the noble establishment have corrected her former ideas of a public, charitable Hospital, which, instead of an odious Lazar-house, is, in truth a *Temple of Health*, dedicated to the honor of the good & glorious *Samaritan*."

Sunday 28 of August 1836.

To Dr. Walter Channing.

METEOROLOGICAL RECORD

For the week ending August 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. *		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
S...6	29.82	75	82	68	54	48	51	N.W.	E.	10		O.		
M...7	29.87	68	75	61	55	44	50	N.	N.W.	8		C.		
T...8	29.91	66	74	57	44	40	42	N.W.	N.	12		C.		
W...9	30.00	64	75	53	45	61	53	N.W.	S.E.	13		C.		
T...10	29.98	64	71	56	69	93	82	S.	E.	4		O.		.99
F...11	29.95	62	63	60	94	94	94	E.	N.E.	14		O.		.06
S...12	29.93	62	66	58	96	95	96	N.	E.	4		O.		.02

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 12, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1318	568	18.27	11.83	12.67	.84	2.17
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	231	106	25.80	17.50	17.63	3.01	2.58
Baltimore	506,389	203	86	32.34	10.78	24.99	2.94	2.94
Cincinnati	405,000	79	—	11 34	12.60	8.82	1.26	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	104	53	47.83	5.82	33.95	9 70	1.94
Washington	271,000	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	68	32	39.69	11.76	33.81	2.94	1.47
Nashville	87,754	32	12	18 78	18.78	12.52	—	—
Charleston	65,165	34	18	20.58	5.83	11.76	2.94	—
Worcester	108,240	30	17	33.33	16.66	33.33	—	—
Fall River	95,919	51	38	50.96	3.92	50.96	—	—
Cambridge	89,724	39	21	25.60	12.80	20.48	—	—
Lowell	88,641	45	28	28 88	6.66	22.22	—	2.22
Lynn	66,763	—	—	—	—	—	—	—
New Bedford	68,340	38	—	44.71	10.52	42.08	—	2.63
Somerville	66,101	12	7	41.65	16.66	41.65	—	—
Lawrence	57,263	26	19	26.95	19.25	22.10	—	—
Springfield	56,501	25	5	32.00	12.00	12.00	8.00	12.00
Holyoke	43,424	22	10	12.45	4.15	8.30	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	—	—	—	—	—	—	—
Malden	34,613	8	3	37.50	12.50	37.50	—	—
Chelsea	33,468	13	9	24.07	—	7.69	7.69	—
Haverhill	32,022	11	7	18.18	9.09	18.18	—	—
Gloucester	30,589	8	3	37.50	—	25.00	12.50	—
Newton	29,716	—	—	—	—	—	—	—
Fitchburg	29,438	—	—	—	—	—	—	—
Taunton	28,167	8	4	37.50	12.50	25.00	12.50	—
Everett	25,338	9	6	—	—	—	—	—
Quincy	23,549	6	1	33.33	50.00	16.66	—	16.66
Pittsfield	22,643	16	7	50.00	—	50.00	—	—
Waltham	22,296	7	2	14 28	14.28	14.28	—	—
North Adams	20,971	9	3	55.55	—	55.55	—	—
Chicopee	17,842	10	7	50.00	—	30.00	—	10.00
Medford	16,511	5	3	20.00	20.00	20.00	—	—
Newburyport	14,915	—	—	—	—	—	—	—
Melrose	14,632	1	—	—	—	—	—	—

Deaths reported 2,482; under five years of age 1,100; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 629, consumption 287, acute lung diseases 145, diarrheal diseases 466, diphtheria and croup 53, typhoid fever 46, whooping-cough 27, measles 15, cerebro-spinal meningitis 14, scarlet fever 5, erysipelas 3.

From whooping-cough New York 15, Boston, Nashville and Charleston 2 each, Baltimore, Cambridge, Lowell, Lawrence, Chelsea and Chicopee 1 each. From measles New York 11, Boston, Pittsburg and Providence 1 each. From cerebro-spinal meningitis New York 6, Baltimore 2, Boston, Cincinnati, Cambridge, Lowell and Holyoke 1 each. From scarlet fever New York and Boston 2 each, Pittsburg 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending August 5th, the death-rate was 24 6. Deaths reported 5,370; acute diseases of the respiratory organs (London) 159, diarrhœa 1,182, measles 128, diphtheria 91, whooping-cough 82, fever 35, scarlet fever 20.

The death-rates ranged from 12.7 in Croydon to 37.4 in Sheffield; Birmingham 24.6, Bradford 18.8, Cardiff 16.3, Gateshead 12.7, Huddersfield 19.2, Hull 18.3, Leeds 24.5, Liverpool 31.5, London 25.2, Manchester 29.0, Newastle-on-Tyne 27.6, Nottingham 28.1, Portsmouth 28.2, Salford 29.6, Swansea 21.1.

RECENT DEATHS.

ANDREW K. SMITH, M.D., an old army surgeon residing in New York, died suddenly of apoplexy, at Cranston's Hotel, near West Point, on August 14th. Dr. Smith entered the medical service of the U. S. Army in 1853, and was retired with the rank of Colonel in 1890. He was in the seventy-fourth year of his age.

NATHANIEL W. LEIGHTON, M.D., a prominent physician of the Borough of Brooklyn, New York, died August 12th, in the sixty-seventh year of age. Not long since he was President of the Fifth District Branch of the New York State Medical Association and one of the Vice-Presidents of the Association.

TUNIS L. SHENCK M.D., died at his residence at Van Pelt Manor, Borough of Brooklyn, New York, on August 15th, of Bright's disease. He was born in Flatbush, where he practised until ten years ago, and was fifty-eight years of age. At one time he was chief physician of the Kings County Hospital. He was a graduate of the Medical Department of the Syracuse University.

BOOKS AND PAMPHLETS RECEIVED.

Golden Rules of Obstetric Practice. By W. E. Fothergill, M.A., B.Sc., M.D., author of "A Manual of Midwifery," etc. "Golden Rules" Series, No. III Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1898.

Hay Fever and Its Successful Treatment. By W. C. Hollopeter, A.M., M.D., Clinical Professor of Pediatrics in the Medico-Chirurgical College of Philadelphia; Physician to the Methodist-Episcopal Hospital, etc. Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

Defective Eyesight: The Principles of Its Relief by Glasses. By D. B. St. John Roosa, M.D., LL.D., Professor Emeritus of the Diseases of the Eye, New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye and Ear Hospital, etc. New York: The MacMillan Co. Ltd. 1899.

The Hygiene of the Mouth: A Guide to the Prevention and Control of Dental Diseases. By R. Denison Pedley, F.R.C.S. (Edin.), L.D.S. (Eng.), Dental Surgeon to the Evelina Hospital for Sick Children, Southwark, London. With numerous illustrations. London: J. P. Gregg & Co. Philadelphia: S. S. White Dental Mfg. Co. 1899.

Selected Papers on Stone, Prostate and Other Urinary Disorders. By Reginald Harrison, F.R.C.S., Surgeon to St. Peter's Hospital; Member of Council, Royal College of Surgeons; formerly Senior Surgeon to the Liverpool Royal Infirmary and Lecturer on Clinical Surgery in the Victoria University. London: J. & A. Churchill. 1899.

International Directory of Laryngologists and Otologists, Containing Names and Addresses of Practitioners engaged in the Study and Practice of Laryngology and Otology. Compiled by Richard Leeke, F.R.C.S. Published under the auspices of the *Journal of Laryngology, Rhinology and Otology*. London: The Rebman Publishing Co. 1899.

Text-book of Ophthalmology. By Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation, revised from the seventh enlarged and improved German edition by A. Duane, M.D., Assistant Surgeon, Ophthalmic and Aural Institute of New York. With 277 illustrations. Second American edition. New York; D. Appleton & Co. 1899.

Saunders' Medical Hand Atlases: Atlas of the External Diseases of the Eye, including a Brief Treatise on the Pathology and Treatment. By Prof. Dr. O. Hoab, of Zürich. Authorized translation from the German edition by G. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia, etc. With 76 colored plates and 6 engravings. Philadelphia: W. B. Saunders. 1899.

The Gross and Minute Anatomy of the Central Nervous System. By H. C. Gardiner, A.M., M.D., Professor of Physiology and of the Anatomy of the Nervous System in the Albany Medical College; Member American Neurological Association. With 48 full-page and 213 other illustrations, many of which are printed in colors, a large number being from original sources. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

THE EFFECTS OF TRAINING.

A Study of the Harvard University Crews.

BY EUGENE A. DARLING, M.D., CAMBRIDGE.

This investigation was undertaken at the suggestion of the Harvard Athletic Committee, by whom it was felt that a knowledge of the physiological changes occurring during severe training would be of value, and that incidentally data might be obtained throwing light on the obscure subject of overtraining. It is intended to make a similar study of the effects of training for several other forms of athletic contests besides rowing, especially foot-ball and running. Since no similar research had, as far as known, been attempted, this first series of observations on the effect of rowing was regarded as tentative. It was doubtful how far the subject would lend itself to study and hence it was thought best not to attempt too much until the more promising lines on which to work had been determined. Much of the work has been somewhat barren of result, while in other directions unexpected facts have been learned and the necessity for further study revealed. For example, it early became apparent that one of the most important parts of the investigation would concern the nutrition and tissue metabolism, but for want of suitable apparatus and in the absence of a chemist to analyze the food and excreta, this part of the work was done only in the most superficial way. It is hoped that a subsequent investigation will include a much more complete study of these important points. The greater part of the work which was thought to be feasible this year was a study of the changes taking place in the heart and kidneys, and a series of observations on the weight and temperature and their relation to the general condition of the men. The observations covered the months of May and June, and hence included only the more strenuous part of the training period, for which all the men had been prepared by long preliminary work, as detailed below.

There were certain difficulties which limited the scope of the inquiry and which must be borne in mind in estimating the results obtained. The chief one was the impossibility of maintaining constant supervision over the men, and the consequent loss of much valuable information. This was not true, however, during the two weeks at New London, where the opportunities for observation were excellent. A second difficulty was that circumstances sometimes compelled the use of cruder methods of examination than would be necessary for the most accurate work. For instance, the most accurate method of determining the size of the heart and the method least liable to error from the "personal equation" is by means of the fluoroscope, but owing to the impossibility of setting up an elaborate x-ray machine at New London, one had to fall back on the less certain method of combined auscultation and percussion aided by the phonendoscope. A third limitation to the inquiry was the obvious one that all the observations had to be arranged so as not to interfere in any way with the main objects of the training, which were to learn to row and to get into the best possible condition. Consequently, nothing in the way of experiment could be attempted nor any examination which would fatigue the men or distract their attention from their rowing.

These limitations were unavoidable, but were counterbalanced in a way by the active co-operation of the coach and of the individual members of the crews. Their courtesy and interest were unfailing and alone made it possible to carry on the observations, involving as they did a considerable expenditure of time and a certain amount of irksomeness.

Preliminary training. — The large number of candidates who began training in the winter were gradually weeded out by a process of natural selection, based on numerous trial races, until but sixteen remained. These men were organized into two crews late in April, and practised daily until early in June. Shortly before going to New London a new man was taken from one of the Weld crews, and five of the squad were dropped. The remaining twelve comprised the two crews — the eight-oar and the four-oar — which took part in the races, and most of the statistics of this paper refer to them. The observations on the five who stopped training early in June were eliminated, so that more accurate comparison could be made.

Of these twelve men all had done considerable previous rowing in their class crews or in the Weld crews. Four had rowed on former Varsity crews and one had been a substitute. Several had begun rowing in preparatory schools. Six out of the twelve had played football and two had practised running. The period of active training for these sports had been from two to six years, so that all the men may fairly be called trained athletes, and the changes effected by training would not be expected to be as marked as in the case of inexperienced men.

The previous health of all the men had been good with one exception, who gave a history of typhoid six years ago and rheumatism a year later.

General statistics. — The following table gives in brief the ages, weights, heights, chest and abdominal measurements and vital capacities of the lungs of the individual members, with averages for the eight and four, and, finally, the averages for the entire squad:

Table I.

No.	Age.	Weight May 9-17.	Height.	Chest measurements.			Circum. of abdomen.	Vital capacity. Cu. ins.
				Inspiration.	Expiration.	Expansion.		
1	20	165	5′ 9″	41″	35″	6″	31″	335
2	20	158½	5′ 11½″	38″	34″	4″	29″	290
3	20	175½	5′ 9½″	41″	37″	4″	33″	330
4	20	180	6′ 1″	39½″	35″	4½″	31½″	330
5	21	177¼	6′ 2″	40½″	37½″	3″	32½″	380
6	19	178	6′ 2½″	39½″	33½″	5½″	31″	330
7	24	167½	6′ 1½″	37½″	33½″	4″	30″	330
8	21	163	6′ 1″	39½″	34½″	5″	31″	350
Average of eight.	20½	170¾	6′ 0½″	39½″	35″	4½″	31½″	334
9	20	159½	5′ 8½″	38″	34½″	3½″	31½″	295
10	21	176	6′	42″	37″	5″	33″	380
11	21	170	5′ 10½″	38½″	34½″	4″	32″	300
12	22	187	6′	39½″	34½″	4½″	31″	290
Average of four.	21	165¾	5′ 10¾″	39½″	35 3 16	4 3-16	31½″	306
Average of squad.	20½	169	5′ 11¾″	39½″	35″	4¼″	31½″	325

I. GENERAL SKETCH OF THE TRAINING.

Daily rowing. — During May and the first ten days of June the daily exercise consisted of rowing on the Charles in the latter part of the afternoon. The distance covered varied according to circumstances from five to eight miles, occasionally more. At New London there was added a short morning row of two to four miles. Between the middle of May and the race there were five time-rows — three on the Charles of three and three-eighths miles each, and two on the Thames over the four-mile course. These time-rows were designed to accustom the men to rowing long distances at high speed and to enable the coach to judge of their form and endurance, but incidentally they afforded excellent opportunities to study the effects of long-continued exertion, and were, moreover, striking demonstrations of the effects of training. The earlier time-rows, though shorter than the later ones, were much more exhausting, and their effects on the hearts and kidneys — the organs showing most evidence of strain — were considerably greater.

For the purposes of this inquiry, however, the time-rows had to be regarded as factors disturbing the regular process of development which might be expected were the daily exercise uniform or slowly increased, and hence it became necessary to divide the observations into two parts, the first directed to the changes in the daily condition, eliminating the effects of the time-rows as far as possible, and the second directed to the immediate effects of the time-rows.

Diet. — The diet allowed was a very generous one, consisting of a hearty breakfast at 7.30, lunch at one and dinner after the evening row. For breakfast the fare consisted of fruit, oatmeal or shredded wheat, eggs, some form of meat, bread and butter, potato and milk. At noon there was cold meat, potato, bread and butter, marmalade, preserved fruit and milk. Dinner comprised soup, occasionally fish, roast beef or some other hot meat, several vegetables, bread and butter and a simple dessert. No tea or coffee was allowed, but ale or claret was permitted at dinner, also water in small amounts as desired. During the last week before the race each man received a dish of calves'-foot jelly with sherry wine after the morning row, and a light lunch of oatmeal, milk and bread was served at four o'clock in the afternoon.

Sleep, bathing, etc. The ordinary allowance of time for sleep was nine hours, from ten to seven. General plunge baths were prohibited, but after rowing the men were allowed a cold shower bath in Cambridge and a bucket bath (for want of a shower) at New London.

Besides rowing the men indulged in very little exercise. While at New London a five-minute walk before breakfast, an occasional game of quoits or spasmodic efforts to play baseball were the only other forms of exercise indulged in. When not rowing, sleeping or eating the men passed the time in reading, writing or in pure and simple loafing.

II. EFFECTS OF TRAINING.

Weight. — It has long been recognized by athletic trainers that the weight is one of the best indicators of condition. The average weight of the eight men constituting the crew from May 18th to June 29th is shown in Chart I.

During the first ten days of this period there were no marked variations, and in spite of two hard time-rows the average on May 29th was exactly the same as on May 18th, 171.4 pounds. Beginning May 30th, when there was a third time-row, there was a steady fall in weight for a week. The weather at this time

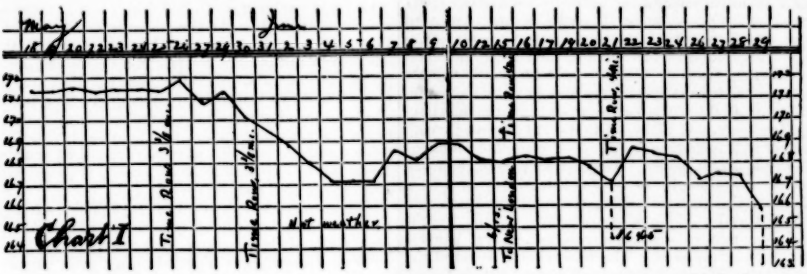


Chart I. Average Daily Weight of Varsity Eight.

was very hot and oppressive, and owing to the fact that the crew rowed for a few days on Spy Pond, Arlington, there was much delay in getting dinner. These two factors, added to the hard work the men were then doing, contributed to the fall in weight. From June 6th until the day of the race the average was very constant, fluctuating between 167 and 169 pounds, although individuals showed more or less variation. Losses in some men were usually balanced by gains in others. Chart II illustrates the range of variation in three of the crew. In the case of No. 7, whose condition was uniformly good, the variation was slight and, leaving out of consideration the sharp fall during the time-row and race, amounted to but three pounds. In Nos. 6 and 3, on the other hand, the range of variation was ten and eight pounds respectively. No. 6 began hard training in April and was somewhat slower in getting down to his normal training weight than the others. The sharp fall in No. 3's line between May 30th and June 2d was accompanied by some insomnia and general malaise, but unfortunately he was not under immediate observation at the time. One of the commonest causes of fluctuation in weight was diarrhea. In several instances slight attacks caused a fall of three or four

pounds in twenty-four hours, though in every case this was quickly restored soon after the diarrhea ceased.

Tables II and III show the effect of the last time-row and of the races on the weight. The preliminary loss means that which is always noticed during the twenty-four hours before a race. It may be attributed to nervousness, affecting the appetite and urinary secretion. This preliminary loss, as might be expected, was considerably greater before the race than before the time-row, being $12\frac{1}{4}$ and $6\frac{1}{4}$ pounds respectively, while the actual losses during the time-row and race were nearly the same, $20\frac{3}{4}$ and 22 pounds respectively.

Through an oversight, the weights of the Varsity four-oared crew were not recorded during the last two weeks of training. A comparison of their weights immediately before and after the two-mile race showed an aggregate loss of 13 pounds, averaging $3\frac{1}{4}$ pounds.

Compensating for the rapid loss before and during the time-rows and races, there was noticed after those events an equally rapid recuperation; this is shown in Table IV, in which are given the total losses and corresponding gains for the time-row of June 21st. Every man recovered all or more than he had lost inside of twenty-four hours.

A loss of several pounds during prolonged exertion does not by any means imply an undue degree of exhaustion, provided the individual is in good condition. The men who lost most were in fully as good condition as their companions both before and after the race. It is generally accepted on experimental grounds that during active exercise the energy is largely if not wholly derived from the oxidation of fat and glycogen, and that the muscles themselves are not used up in the process. The end products of this combustion — chiefly water and carbon dioxide — are rapidly excreted through the lungs and skin. The loss of weight represents very closely, therefore, the amount of fuel used up. Hence the man who has an adequate supply of reserve fuel in the form of fat and glycogen is in better condition to withstand a prolonged exertion than one who is deficient in

TABLE II. Loss of Weight in Time-row of June 21st.

	1	2	3	4	5	6	7	8	Total.	Average.
Preliminary loss.	1	1	0	1	1	¼	½	1½	6¼	¾+
Loss during time-row.	1¾	2½	2¾	4	2	2¾	3	2	20¾	2½ −
Total loss.	2¾	3½	2¾	5	3	3	3½	3½	27	3⅜

TABLE IV. Twenty-four-hour Gain after Time-row of June 21st.

	1	2	3	4	5	6	7	8	Total.	Average.
Total loss.	2¾	3½	2¾	5	3	3	3½	3½	27	3⅜
Gain in 24 hours.	4¼	5	4¾	5½	3¼	3¾	3½	3½	33½	4 3-16
Net Gain.	1½	1½	2	½	¼	¾	0	0	6½	13-16

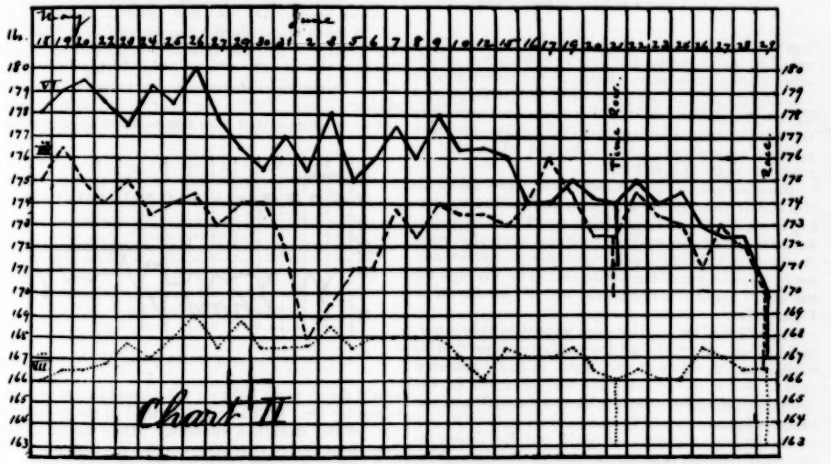


CHART II. Weight Chart of Nos. 3, 6 and 7, showing Daily Variations.

TABLE III. Loss of Weight in Race, June 29th.

	1	2	3	4	5	6	7	8	Total.	Average.
Preliminary loss.	2	1¾	2¼	¼	1	2½	0	2½	12¼	1½+
Loss during race.	2½	2	3½	3	2	3	3½	2¾	22	2¾
Total loss.	4½	3¾	5½	3½	3	5½	3½	5½	34½	4¼+

those substances. This corresponds with the experience of all athletes. There is always a loss of weight during the early part of training, while a man is getting rid of superfluous fat, but every athlete knows that when a certain point is reached — his so-called "weight in training" — any further reduction is accompanied by a feeling of lassitude and an incapacity to sustain prolonged exertion without excessive fatigue. This form of over-training, known as "staleness," is in all probability due to a deficiency of reserve fuel. These facts emphasize the importance of maintaining at a proper proportion the fat and carbohydrate constituents of the diet instead of sacrificing them for an excess of nitrogenous material — a mistake which is undoubtedly often made, and which will be discussed more in detail later.

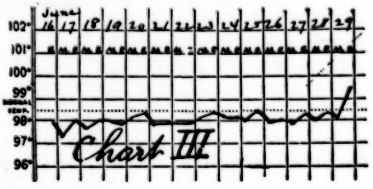


CHART III. Temperature Chart of Entire Squad.

Temperature. — The temperatures were taken in the mouth twice daily, at 8 A. M. and 9.30 P. M., during the last two weeks of training. The chief points brought out by the routine readings were the great variation in individual cases and the persistent tendency to subnormal temperatures. The average for the entire squad remained near 98° F., as shown in Chart III.

A few individuals maintained approximately a normal average of 98.5°, but the majority showed wide variations. It was not uncommon to find a temperature of 96° in the morning and 98° or more in the evening in the same man. Charts IV and V are fair sample charts.

The individual variations could not be shown to have any definite relation to the general condition beyond the coincidence that those men who varied most in weight also varied in temperature. The body temperature is dependent on so many circumstances that variations within limits are to be expected. The heat production during muscular and other metabolic action is constantly balanced by the heat loss in warming the expired air, the urine and feces, by evaporation of perspiration and by conduction and radiation from the skin. During training the greater part of heat production by muscular action (supposed to be its main source) is confined to a comparatively brief portion of the twenty-four hours and during that same portion the heat loss is also great. It is not surprising that the heat balance is not stationary and the charts show that in fact in the majority of cases it is not maintained at a fixed point.

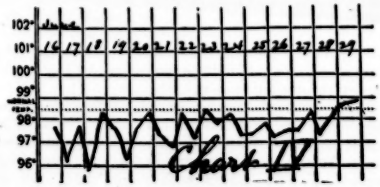


CHART IV. Temperature Chart of No. 8.

On the day of the races the temperatures were taken three times, first, at 8 A. M., second, while the men were dressing for the race, and finally, from ten to fifteen minutes after the race while returning to the quarters in the launch. There was an average preliminary rise in temperature, corresponding to the preliminary fall in weight, amounting to about 1.5° F., followed by a slight rise of .2° during the four-mile race. In the case of the four-oared crew the average preliminary rise was .7° and a further rise during the two-mile race of .7°. A glance at the Table (V) shows that on the whole those men who had the greatest preliminary rise had either a stationary or falling temperature during the race (Nos. 2, 4 and 5). The other extreme was seen in No. 9, who had a preliminary rise of only .2° and a rise during the race of 2.6°. In several instances the net variation was very slight.

It was hoped that the temperature observations would throw some light on the remarkable results obtained by Drs. Williams and Arnold in their observations of the Marathon runners.[1] They found a uniform drop during that race (a 25-mile run) of 2° to 5⅛°. That race, however, was run in the middle of April at a temperature of 44° F. and against an easterly wind — the conditions all favoring rapid cooling by conduction and evaporation. Furthermore, the temperatures were all taken in the mouth and after nearly three hours of rapid breathing of air at 44° F. it is not unreasonable to assume that the mouth cavity may have been cooler than the body generally. One cannot accept as proved their assertion that after prolonged exertion the temperature is invariably lowered. It is the same with their implication that a subnormal temperature during training means "staleness." This idea was apparently based on the single observation that the temperature of one of the contestants was 97.5° before and 97° after a practice run; that the man was advised to rest and to partake of more carbohydrates; that on the morning of the race his temperature was 98.2°, and finally that he was among the winners. This observation proves nothing except that a rest and some carbohydrates are good things before a race. The temperature variation was quite within normal limits. If subnormal

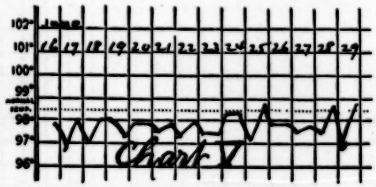


CHART V. Temperature Chart of No. 4.

[1] Philadelphia Medical Journal, iii, 1,233.

temperature means overtraining, then nearly every man in the Harvard crew squad was overtrained at one time or another during the last two weeks before the races, a statement which certainly would not be borne out by the other facts in their condition nor by the vigor which they all displayed during the last time-row and especially during the races. The rise of temperature observed just before the races certainly did not mean a rapid recovery from a condition of "staleness," but simply indicated that for some reason,

TABLE V. Variations in Temperature during Races.

	Varsity Eight.								Varsity Four.					
	1	2	3	4	5	6	7	8	9	10	11	12	Av. of 8.	Av. of 4.
Temperature at 8 A. M.	97.8	97.7	98.3	96.6	97.6	99.0	99.0	98.6	97.0	98.4	98.3	98.4	98.1	98.0
Temperature before race.	99.2	100.0	99.2	98.6	98.7	100.6	100.2	98.9	97.2	98.7	99.8	99.2	99.55	98.73
Temperature after race.	100.7	98.7	100.3	98.7	99.4	100.6	100.2	99.2	99.8	98.4	100.2	99.3	99.73	99.43
Preliminary rise.	1.4	2.3	0.9	2.0	2.1	1.6	1.2	0.3	0.2	0.3	1.5	0.8	1.5	0.7
Variation in race.	+1.5	−1.3	+1.1	+0.1	−0.3	0.0	0.0	+0.3	+2.6	−0.3	+0.4	+0.1	+0.2	+0.7
Total variation.	+2.9	+1.0	+2.0	+2.1	+1.8	+1.6	+1.2	+0.6	+2.8	0.0	+1.9	+0.9	+1.7	+1.4

probably a nervous one due to excitement, the heat production was greater than the heat loss. During the boat races, which were rowed on a clear, sunny day at a temperature of about 80° F. and low humidity, the conditions were favorable for rapid heat loss by perspiration and radiation, so that the excessive heat production which, according to all physiological experience, must have taken place was readily dissipated and the temperature balance maintained. On the whole we must admit that a subnormal temperature, while of possible significance, cannot yet be regarded as a positive proof of overtraining.

(To be continued.)

A SAFE AND QUICK METHOD OF JOINT AND BONE FIXATION.[1]

BY EDWARD A. TRACY, M.D., BOSTON.

IN this paper will be briefly described a method for quickly producing fixation of the joints and bones. The fixative material employed is wood fibre reinforced with gauze. It is made in large sheets of two thicknesses. It is adaptable to all cases of surgical splinting. The fixation is produced by moulding upon the limb a properly shaped piece of the splint material, (this piece may be termed the "splint-blank") and bandaging it snugly to the limb. When moulded and bandaged properly the moistened wood fibre produces immediate fixation. Sometimes, when great strain on the material is apprehended, as, for example, in hip-joint fixation, it is advisable to apply a double splint-blank.

Before describing the technique in detail of this method of fixation, I shall define a term already mentioned — splint-blank. The term is newly coined. My apology for it is that it is a term of convenience in the descriptions that follow. When it is desired to immobilize a limb or a part of it by this method we cut a paper pattern so as to embrace the limb in the same manner we wish the completed splint to embrace it; this paper pattern we lay on a sheet of the splint material and we cut from the sheet a piece following the outline of the pattern; this piece is the splint-blank; when moistened with water and bandaged over the limb it forms the splint. A splint-blank, therefore, is a piece of splint material cut in such fashion that when moistened it can be bandaged over the part for which it is intended, producing fixation of the part.

In describing the manner in which fixation of the various joints and bones is produced by the new method, I shall proceed in the following order: (1) The fingers; (2) the thumb; (3) the wrist; (4) the bones of the forearm; (5) the elbow-joint; (6) the arm; (7) the shoulder-joint (humeroscapular); (8) the claviculoscapular joint; (9) the cervical spine; (10) the ribs; (11) the hip-joint; (12) the hip and knee joints; (13) the knee; (14) the leg; (15) the ankle; (16) the toes.

(1) *The fingers.* — The fingers together can be immobilized by bandaging a piece of moistened splint material folded over the palm and back of the hand. I have done this in the treatment of multiple lacerations, getting quick union because of the immobilization produced, and giving the patient comfort because of the protection afforded the injured parts. This use of wood-fibre material to produce immobilization of the soft tissues during healing originated with Dr. Fletcher, of South Boston. His experience, related orally, led me to use the material for this purpose.

Fixation of a separate finger is produced by moulding the correctly shaped splint-blank over the back and sides of the finger to be immobilized and the back of the hand. This bandaged over the finger and hand produced a complete fixation of the finger. For cases of finger fixation the thinner sheet of the splint material should be used. I have produced fixation of the separate fingers for joint disease and compound fractures.

(2) *The thumb.* — The thumb can readily be immobilized by bandaging to it and the hand a splint-blank that encloses the thumb and the back and front of the hand, taking care the cross-palm lines in the hand are not covered by the material, which could thus interfere with flexion of the fingers.

[1] Paper read to the New York County Medical Society, November 21, 1898.

I have employed this method in immobilizing dislocated and contused thumbs.

(3) *The wrist.*— A perfect fixation of the wrist-joint can be produced by bandaging over the wrist, hand and forearm a moistened splint-blank cut so that it covers the back of the hand, wrist and forearm. I have frequently produced immobilization of the wrist in this manner in the treatment of sprains, fractures and joint diseases. The fixation is absolute, and the splint readily permits of the most efficient treatment of Colles's fracture: retention of the fragments until reunion takes place; passive motions of the fingers and thumb from the first day, and careful passive motion of the wrist from the fifth day.[2]

(4) *The bones of the forearm.* — The bones of the forearm are immobilized by bandaging a moistened splint-blank cut so as to lie over the back of the forearm and hand and over the palmar surface of the forearm; or by bandaging two splint-blanks, one cut so as to lie over the dorsal surface of the forearm and hand, the other over the palmar surface of the forearm, and cut so as to overlap the other at either radial or ulnar side. This forms a casing for the forearm and permits of efficient maintenance of the fixation of the enclosed bones.

In a case of fracture of the ulna, upper third, a dorsal splint moulded on the forearm was found sufficient to produce fixation. In a case of fracture of the ulna produced by the kick of a horse a splint was moulded over the external aspect of the flexed arm, the dorsal aspect of the forearm and hand, producing in this manner immobilization of the elbow and wrist joints; a splint was also moulded over the palmar surface of the forearm; this combination produced absolute immobilization of the radius and ulna, deemed desirable in this case, an old man with double cataract and atheromatous arteries.

In seventeen days there was union; on the twenty-first day the angular splint was cut across at the elbow, so that it became a simple dorsal forearm splint. For safety this was left on eight more days, and twenty-nine days after the beginning of treatment the patient was discharged well, with normal mobility; the callus but moderate in size.

(5) *The elbow-joint.*— Fixation of the flexed elbow-joint is readily effected by bandaging a moistened splint-blank, cut so as to embrace the arm, and the dorsal and ulnar aspects of the forearm, the forearm being in the semi-prone position. This splint form has served well in several cases for fixation of the elbow joint after reduction of dislocations, and in cases of fracture into the joint. The joint can be fixed at any angle, the shape of the splint-blank varying with the angle.

(6) *The arm.*— Fixation of the arm for fractures of the shaft of the humerus.

Fracture of the surgical neck. — I have treated several cases of fracture at the surgical neck of the humerus by moulding a splint-blank over the shoulder and external aspect of the arm (a shoulder cap), and another splint-blank to lie over the inner aspect; these were bandaged over the arm and the arm thus splinted was bandaged to the side of the body, the elbow being flexed and the wrist supported in a sling. This method of splinting for fracture of the surgical neck is essentially Hamilton's. He used leather. Wood-fibre material is preferable because it is much easier to manipulate and is porous, a decided advantage over leather.

Fracture of the shaft near the elbow-joint. — In a recently treated case of transverse fracture of the shaft of the humerus just above the elbow-joint in which the lower fragment was tipped forward so as to allow of considerable hyperextension, the fracture was reduced by pulling on the elbow-joint in the direction of the line of the shaft and at the same time flexing the elbow to an acute angle. The fragment was kept in this position by keeping the elbow to an acute angle and a moistened splint-blank cut so as to embrace the tip of the shoulder, the arm and the forearm in this position was moulded and bandaged over the parts. The splinted member was then bandaged so as to lie over the front of the chest wall. This splint was worn for sixteen days, then discarded for a sling. A few weeks of passive motion, massage, and weight-carrying restored the arm to perfect functional use.

(7) *The shoulder (humeroscapular joint).* — Fixation of the shoulder-joint is readily obtained by bandaging to the arm a moistened splint-blank, cut so as to lie over the shoulder and embrace the arm, and bandaging the splintered arm to the side of the chest, the hand and forearm lying across the front of the chest, under the bandage. The latter bandaging is of importance. When viewed from the front or back this bandage should have the appearance of a triangle, with its apex in the sound axilla, one end of its base over the top of the shoulder, the other at the elbow.

The splint-blank can be moulded over the shoulder by cutting a slit or two in its upper border toward the point that lies over the top of the humerus; this allows an overlapping of the redundant portion of the splint material and permits it to be moulded over the shoulder.

(8) *The claviculoscapular joint.* — Fixation of this joint can be produced by moulding a splint-blank cut so as to lie over the clavicle, the scapula, and to a line on the chest about five inches below the clavicle. This splint is kept in close apposition to the parts, and thus immobilizes the claviculoscapular joint, by means of an elastic webbing loop buckled over the chest. The apparatus is fully described and illustrated in the *Boston Medical and Surgical Journal.*

(9) *The cervical spine.* — The cervical spine can be immobilized by moulding several superimposed splint-blanks cut so as to lie over the occiput, the back of the neck, and the upper back. Le Page's liquid glue should be spread between the several splint-blanks, and the superimposed blanks bandaged singly over the parts. This is somewhat difficult because of the great normal mobility of the shoulder. To aid in the fixation of this splint form by bandaging it, it is well to place a roller compress in the hollow over the neck, of course outside the splint.

In a case of trauma in the immediate region of the left occipito-atloid articulation, I produced fixation of the cervical spine in the manner described with great comfort to the patient.

(10) *The ribs.* — Fixation of the ribs in the ordinary sense is an impossibility. An approximation to it is effected by the swathe, or adhesive plaster. In cases of fracture of the ribs neither of these protect the injured parts from pressure. In the treat-

[2] See paper on Colles's Fracture in Journal of the American Medical Association, November 20, 1897.

ment of fractured ribs I mould a splint-blank to lie over the fracture and to rest on the sound ribs; this splint, when held in position by a snugly applied swathe, is a source of comfort to the patient because of the protection it gives the injured parts. I have treated broken ribs in every situation of the chest in this manner, always satisfactorily.

(11) *The hip-joint.* — Fixation of the hip-joint is readily produced by bandaging a splint-blank cut so as to lie over and clasp the side of the body from the level of the base of the scapula, and the thigh to the knee. A double splint-blank should be used. The manner of bandaging this splint form to the body is important. The roller should be applied first so as to embrace the body around both hips for several turns; then in figure-of-eight style around the splinted thigh and body; then down the thigh; finally a bandage should be applied around the body and upper part of the splint. The splint I here exhibit was moulded and applied in a case of traumatic synovitis of the hip-joint in a half-hour's time, without assistance. These splints are durable, some having been worn in tubercular cases for more than twelve months.

(12) *The hip and knee joints.* — Fixation of the hip and knee joints simultaneously is seldom required. It can be produced by means of a splint-blank like that for hip-joint fixation — but made longer, so as to embrace the leg below the knee. I have produced such fixation in a case of tuberculous disease of both joints (the left limb) with excellent result.

(13) *The knee-joint.* — Fixation of the knee-joint extended or at any angle is readily produced by the use of wood-fibre splint material. This fixation can be effected by several procedures, each of which will be described.

Fixation of the extended knee. — The simplest method of producing fixation of the extended knee is by bandaging a moistened splint-blank cut so as to lie over the posterior and internal lateral aspects of the leg and thigh — from a half-inch above the ankle to near the pubic bone. The length of the splinting is important, because the further it extends in both directions from the joint the greater is the leverage obtained for controlling the joint. This splint rightly made and applied gives an absolute fixation of the knee-joint. This immobilization can be efficiently maintained by keeping the splint snugly bandaged to the limb. In many cases of traumatic synovitis of the knee-joint I have used this form of splint. I believe that efficient fixation with non-use of the joint cannot be too strongly advised as soon as possible after such injury is received by the knee. This treatment is *curative* and would prevent many of the cases of chronic synovitis, with subacute exacerbations, so frequently met with in practice. The previous history of those cases is that they had no treatment at the time of injury, or that the treatment was manifestly inefficient. It is, I know, a serious matter to insist upon a person who is the main support of a family leaving work for a month. It should be done rather than the patient run the risk of being handicapped in life's struggle by a weak and chronically diseased joint. I would not be understood as advocating excessive splinting, which can be injurious, especially in cases associated with hysteria. After-treatment can remedy the damage done in the rare cases of over splinting — but no treatment can repair the damage done by inefficient treatment directly after the accident.

These remarks about the importance of efficient fixation in the treatment of traumatic synovitis of the knee-joint are applicable to similar injuries of the shoulder-joint. Cases of chronic synovitis of the shoulder are met with having a history of neglect of treatment or very inefficient treatment at the beginning of the trouble. Putting the arm in a sling or strapping with adhesive plaster does not immobilize the shoulder-joint and therefore is inefficient treatment.

The splint form above described I have found very efficient in cases of traumatic synovitis; also to produce fixation after operations on or near the joint, as the removal of movable bodies in the joint and hydroma over the knee-pan.

For long-lasting immobilization, as that required in the treatment of tuberculosis of the joint, splinting that may be described as an encasement of the limb is preferable. This is done by moulding two lateral splint-blanks cut so as to enclose the limb from a short distance above the ankle (about one-half inch) to as near the perineum as possible, one slightly overlapping the other. To mould these accurately over the limb, it is necessary to incise the splint-blanks where there is a redundancy of material; the incisions if properly made allow the redundant material to overlap, and the splint-blank to be moulded into apposition with the limb's surface, and do not weaken the splinting. This method of splinting the knee is superior to the plaster-of-Paris method for the following reasons:

First. The fixation is superior because no cotton batting or other padding is between the fixative appliance and the skin. The nearer a fixative appliance is to the parts to be immobilized the better the resulting fixation. This is a principle of mechanics to be remembered — not ignored.

Second. The splint can be removed and the joint inspected at any time by the easy procedure of unwinding a bandage; the appliance is not injured by such removal.

Third. Subsidence of swelling or tissue atrophy does not impair the immobilizing properties of this splint, for when such occurs, the resiliency of the splint material permits the immediate production of complete fixation by applying the retentive bandage more snugly.

Fourth. The splint is more durable; at the end of eight months it is as efficient as when first applied.

Fifth. The splinting is much lighter, a fact gratefully noted by patients who had before been treated by plaster-of-Paris.

Sixth. The splinting is cheaper.

Fixation of the flexed knee. — Fixation of the knee flexed at any angle is readily produced. A double splint-blank cut so as to lie over the inner aspect and embrace the thigh and leg in that position in which we desire to immobilize it, is bandaged to the parts; this produces fixation.

I have produced fixation of the knee in the flexed position, in the treatment of broken leg-bones, in cases where relaxation of the leg muscles was indicated, the leg-bones being immobilized as described in the next paragraph.

(14) *Fixation of the leg-bones.* — Fixation of the leg-bones is produced by bandaging a splint-blank cut so as to embrace the leg, except its posterior aspect, and extending from the lower end of the front of the tibia to its upper end. This splint serves admirably in the ambulatory treatment of broken legs. No

vague theorizing is necessary to explain why the broken shaft being restored to its right form the splint holds it there, and the body-weight is transmitted through the shaft thus restored to its functional integrity.

(15) *The ankle-joint.*— Fixation of the ankle-joint is readily produced by means of the wood-fibre splint material. I will describe briefly two procedures. A splint-blank can be cut so as to lie over the inner aspect of the leg, ankle and palmar surface of the foot; this if cut properly, when moistened can be bandaged snugly over the parts, thus producing fixation. Another way is to cut a splint-blank from a thin sheet of the material — the splint-blank shaped so that when moistened it will lie over the internal aspect of the lower part of the leg, the palmar surface of the foot, and the external aspect of the ankle and lower part of the leg. This when bandaged over the foot, ankle and lower part of the leg produces a perfect fixation of the ankle-joint.

(16) *Fixation of the toes.* — The big toe can be immobilized by moulding a moistened splint-blank cut so as to embrace it and the dorsal and palmar surfaces of the foot, and bandaging it snugly over the parts. To produce individual fixation of the remaining toes is impractical; they must be immobilized together. The toes are readily immobilized by moulding over them and the foot a splint-blank cut so as to extend from above the heel along the sole of the foot to about two inches beyond the toes; laterally it should extend about three inches beyond the outline of the anterior half of the sole. In moulding this splint-blank over the toes and foot, first the lateral projections of the blank are folded over and moulded upon the anterior half of the foot, then the projecting piece of the blank in front of the toes is brought (lifted) upwards and folded over the others. The whole is snugly bandaged over the foot and ankle. The resiliency of the splint material permits the piece moulded over the heel to be bent downwards to permit of the easy removal of the splint. It can readily be reapplied. This splint form produces an efficient immobilization of the toes. It is illustrated in the *Boston Medical and Surgical Journal*, November 21, 1895.

The method of joint and bone fixation here described is designated safe, because the parts immobilized can be inspected at any time by simply unwinding the retentive bandage; quick, because a few moments are sufficient for applying the splint material in most cases. The efficiency of the immobilization is worthy of consideration. I do not recognize as fixative in the correct usage of the term any material that necessitates the use of cotton batting or other padding between it and the skin.

THE PEARL A URINARY CALCULUS. — According to certain naturalists the pearl is a pathological product, an attempt to get rid of some foreign body, a grain of sand, fragment of shell or something of the kind, which falls into the genital gland or vicinity, and is thus in fact merely a renal or urinary calculus, and the oyster an unfortunate mollusc victim of nephritic lithiasis. An article in the *Revue des Deux Mondes* describes the efforts that have been made to cultivate pearl development by trephining the shell and introducing a tiny artificial pearl as a nucleus. — *Journal of the American Medical Association.*

Clinical Department.

A CASE OF SARCOMA OF UTERUS; REPEATED OPERATIONS; RECURRENCE; DEATH.[1]

BY S. J. MIXTER, M.D., BOSTON.

M. J. C. came to the Massachusetts General Hospital on February 21, 1890, for the first time and gave the following history: Born in Massachusetts; living in West Gardner. Married; fifty-four years old. Family history negative. Has had two children, and since the birth of the last one, thirty years ago, that is, when she was twenty-four years old, has had three miscarriages without known cause. She began to notice a slight flowing at irregular intervals about ten months before her entrance to the hospital. She has had slight pain in the pelvis. She says that something came down into the vagina about six months ago; that she pulled on it and tried to get it out, but it bled and pained her. A large lobulated, fibrous polyp was found with a pedicle attached to the posterior wall of the os uteri.

On February 25th she was operated on under ether. The pedicle of the mass was cut with scissors. Pressure over the uterus led to the birth of two more polyp, and other small ones were removed by forceps through the vagina. There was considerable hemorrhage. A hot corrosive douche was given and the vagina and uterus were packed with gauze. The convalescence was uneventful. She was discharged on the sixth day after operation.

Dr. Whitney reported on February 25, 1890, as follows: A lobulated, moderately firm and translucent growth, the lower surface of which was necrotic. It was composed of fibrous tissue in part, and between the bundles of this was a richly-cellular tissue, in which were evidently the remains of tubular glands; a polypoid growth from the mucous membrane chiefly.

On May 12, 1893, she returned to the hospital. A few months before a vaginal discharge accompanied by backache had set in. Examination showed a round, soft mass, completely filling the vagina. On the sixteenth this was removed, and she was discharged on the twenty-fourth.

A year later she returned with a soft, pulpy mass about the size of a lemon protruding into the vagina. She was not in robust condition, having lost a good deal of blood. A soft, pulpy, purplish foul mass was removed and the uterus curetted. She was advised to return for hysterectomy if she had further trouble.

She returned in a year, complaining of bleeding and a sense of weight in her pelvis. There was a large, spongy, pedunculated mass, nearly as large as a grapefruit, in the vagina, which was removed.

Almost exactly a year later she again returned. A week before entrance a polyp had protruded an inch beyond the vulva and had bled considerably. When she went to stool the polyp went back, she thought, and the bleeding stopped. On examination the cervix was felt as a soft ring lined with an irregular growth. A large amount of material which looked like fish-spawn, only more translucent, was removed. Dr. Whitney reported a small polypoid, or rather papillary-looking mass, composed of a myxomatous base

[1] Read before the Obstetrical Society of Boston, February 21, 1899.

with enlarged and irregularly-shaped gland-like involutions covering the surface; a mucous and adenoid polyp, not malignant."

Returning a year later, she said that three weeks before a soft mass, which had protruded from the vulva for a week or more, broke off, causing considerable bleeding. Two or three days later another mass protruded. In the vagina were found numerous polypi and some sloughing stumps. The discharge was foul. The masses were torn away with forceps and the uterus and vagina curetted. A large teacupful of cyst-like masses was removed.

Five months later she returned with a soft, dark tumor protruding from the external os, which bled on slight pressure. A tumor, the size of two fists, and made up of soft, friable material was removed. This was the first time that sarcoma was reported.

She came back again two months later, that is, last February, having noticed a lump in the neck of the uterus. She had not been free from pain since leaving the hospital. Hysterectomy was performed, the fundus being amputated low down on the cervix. The disease had infiltrated the pelvis and also appeared on the intestines.

She gained eight pounds in the next two months and a half, but in May she noticed that the nozzle of her douche entered the vagina with difficulty. She entered again and a polyp which filled nearly the whole vagina was removed.

In August, however, she came back, and several sarcomatous masses the size of hen's eggs were shelled out of the vagina with hands and scissors. Microscopical examination of one of these showed a typical sarcoma made up of round and spindle cells.

She began to have pain again in September, and the growth appeared at the vulva on October 25th. On the 25th a large, foul, sloughing mass the size of a banana was removed from the vagina. She remained in the hospital receiving the Coley treatment until her death, which occurred about the middle of November.

The above case is reported for two reasons: (1) because sarcoma of the uterus is a comparatively rare disease, and (2) to show the necessity of early radical operation in all cases of recurrent uterine growth or hemorrhage, whatever may be the result of the microscopical examination.

In all, this patient was operated upon eleven times by six different surgeons, including myself, and it was not until the seventh operation that the microscope showed anything malignant. Had the uterus been totally removed after the first or even second recurrence the result might possibly or even probably have been a cure.

Dr. Whitney was the first to my knowledge to insist on hysterectomy in cases of recurrence, whatever might be found by the pathologist, as his experience shows that the growth may be clinically malignant, or at least may become so.

It is due to the various surgeons in charge of the case to state that until the disease was practically beyond radical treatment, the patient refused to have the uterus removed. The later operations were entirely for the relief of symptoms, hemorrhage and sloughing. The extreme rapidity of growth and the great amount of sarcomatous tissue that formed before sloughing took place were striking features of the case.

A CASE OF MYXOSARCOMA OF THE UTERUS AND VAGINA, FROM THE SERVICE OF DR. J. G. BLAKE AT THE BOSTON CITY HOSPITAL.[1]

BY E. H. MACKAY, M.D., BOSTON,
Gynecological House Physician.

On June 21, 1898, the following patient presented herself for treatment at the Boston City Hospital. The case is reported on account of the rarity of the disease in this location, and also on account of its pathological interest. The salient points are as follow:

Mrs. C., age sixty-three, married twenty-five years. She was operated upon at the Massachusetts General Hospital, May 18, 1898, and the following is taken from their records:

"An eroded fungoid mass springing from cervix occupied the vault of the vagina; limits could not be defined by the finger. Discharge very foul. Large masses removed by fingers, tissues found infiltrated and no exhaustive dissection made; discharged June 11th."

Diagnosis. — Myxosarcoma.

The complaint is, that for the past six months there has been considerable loss of flesh and strength, and recently there has been a constant sharp pain across the lower abdomen and small of the back, and a more or less bloody discharge from the vagina.

While the patient was being prepared for examination, a tumor was expelled from the vagina. Macroscopically, it resembled organized blood clot. Its origin was from the anterior vaginal wall, its former attachment being readily felt. Further examination revealed the presence of three or four more tumors higher up, varying in size from that of a lima bean to that of an English walnut. These masses were removed manually and with the curette by Dr. Blake. The pathologist's report of the specimen was: "Mixed-cell sarcoma."

The patient was discharged in twenty-one days relieved.

The subsequent history of the case could not be obtained as the patient left the country immediately after her discharge from the hospital and no relatives or friends could be found to give further information concerning her condition.

The recognition of this varity of new growth in the vagina belongs to the very recent times. It appears in the form of a circumscribed round tumor in the submucous tissue, and also as a diffuse superficial degeneration of the vaginal walls.

Without question, instances of the first sort may without close historical examination be ranked with fibromyomata and those of the vagina may develop in a similar manner to the rare forms of papillary sarcoma of the cervix, into polypoid papillary excrescences.

It is interesting to note at what an early age this growth has appeared in the few recorded cases, and that in a single case it is stated that at birth a tumor the size of a pea was found between the labia. In one case the age was two years, in another, two and one-half years, and in two others, three years.

The anterior vaginal wall was entirely or largely the seat of the growth in six instances, the posterior wall twice, the right lateral once, and the entire circumference once.

In five reported cases in children the first sign was

[1] Read before the Obstetrical Society of Boston, February 21, 1899.

the appearance between the labia, without subjective symptoms, of a small polypoid tumor. When the growth was accompanied by increased secretion, atypical hemorrhages, dysuria, and bearing-down sensations, then it had attained considerable development.

When suppuration and extension to neighboring organs had occured, then the symptoms were dependent on the local changes, and in children especially the pressure symptoms on the pelvic organs were very marked.

A Russian observer reports two cases. The first concerns a strong multipara in whom two years previously there had appeared a small tumor on the posterior vaginal wall near the fornix which slowly increased in size, resisting all local measures. The tumor was about the size of a half dollar and was ulcerated upon its surface.

Prof. Kieter extirpated it and it proved to be a spindle-cell sarcoma lying in the mucous membrane, and extending scarcely at all into the submucosa. Recurrence speedily set in.

Kieter reports a case of similar nature which was seen in the Moscow Marien Hospital, the patient being a female seventeen years old. On the post-vaginal wall was a soft, easily torn tumor the size of a goose egg, and in four months after extirpation it had recurred, and was the size of the fist. The very anemic patient died shortly after the second operation.

Spiegelberg reports a case of fibrosarcoma of the lower portion of the vaginal wall the size of a walnut. This was extirpated, and examination proved it to be a spindle-cell sarcoma. The patient convalesced well, although in poor condition at the time of the operation. Four years afterwards there was no recurrence.

Steinthal divides the disease into two varieties, the polypoid and the diffuse. The former more common in children, and usually situated in the anterior vaginal wall. The latter more common in adults, and found in any portion of the vaginal canal. In adults, when secondary to sarcoma of the uterus, usually first noticed as knobbed polypoid outgrowths in the vaginal vault.

Symptoms. — In children pain and tumor. In adults vaginal discharge and slight hemorrhage from surface of the growth.

Diagnosis made by microscopic examination.

Delay makes prognosis serious.

Treatment early and radical removal of the growth.

Kelly reports two cases where permanent recovery followed removal.

CASE OF SARCOMA OF THE UTERUS.[1]

BY F. H. DAVENPORT, M.D., BOSTON.

THE case I am about to report is interesting not only on account of the ultimate diagnosis, namely, sarcoma, but also for the preceding history, which covers a period of nearly five years. The patient was a married woman who had had one child, and was between forty and forty-five years of age when I first saw her, October 29, 1893. I was asked to see her by Dr. Lovett to operate for the removal of a fibroid polypus. She had had the usual symptoms of irregular flowing and leucorrhea. I found a round polypus about the size of a billiard ball attached by a small pedicle to the uterus, and removed it by twisting and severing the pedicle with scissors. She made a good recovery.

I next saw her in June, 1894, and found on bimanual examination what I supposed to be an enlarged and irregular uterus, the seat of multiple fibroid growths. The patient gave a history of six weeks' constant flowing, which, however, had ceased before she came to me. I advised doing nothing at the time, but in July she consulted her physician at her summer home, who found another polypus extruded from the os uteri. That was removed at St. Margaret's on July 11th. In October of the same year she began to have an increased flow and watery discharge between times, and in December a third growth similar in character to the previous ones was discovered and removed. These growths were to my eye typical fibroid polypi, and with the uterus presumably the seat of multiple fibroids, their gradual development and extrusion was explained. The growth in the pelvis was slowly enlarging. The question of some more radical operation was spoken of at this time, but family considerations made it extremely unwise then, and as the patient's general health continued good it was postponed. Nothing new developed until November 26, 1895, nearly a year, when the fourth polypus was removed. This was done at a time when there had been and still was considerable hemorrhage, and the operation was followed by a decided flow, which was checked by packing the uterus. In fact it was a peculiarity of all these operations that they were accompanied by more flowing than is usually the case.

April 21, 1896, five months after the last polypus, another was discovered. There had been a rapid increase in the size of the tumor since the last operation, so that it reached nearly to the umbilicus, and enlarged the abdomen considerably. It was still thought to be a fibroid. The operation was as usual, and the first day or two of the convalesence uneventful. On the morning of the third day the patient was found to be in intense pain in the abdomen, coming on in paroxyms, alternating with collapse, weak pulse, vomiting and suppression of urine. Under stimulation she improved, but was in a critical condition for twenty-four hours. On examining the abdomen at this time it was found that the tumor had disappeared and the abdomen was flat. Of course the explanation was a spontaneous rupture of a cyst, and the collapsed condition was due to the flooding of the peritoneum with the cyst contents and its efforts to absorb it. I regret that the exact notes of the case at this time cannot be obtained, as the condition was a very unusual and interesting one. Perhaps Dr. Lovett or Dr. Stone, both of whom saw her at the time, can give fuller details.

An examination of the specimen removed at this time by Dr. Curry, of the City Hospital, showed it to be a submucous fibroid which had undergone myxomatous degeneration, portions of which were necrotic, and into which there had been much hemorrhage.

The collapse of the tumor disproved the diagnosis of a fibroid, and put a new aspect on the case. I hoped that it was one of those thin-walled cysts of the broad ligaments which rupture easily and do not refill. Unfortunately that did not prove to be the case, for after some months the tumor could be again felt, and grew so rapidly that by November of that year it was deemed best to operate for its removal.

A laparotomy was performed on November 30th, and the following condition of things found: The uterus

[1] Read before the Obstetrical Society of Boston, February 21, 1899

was only slightly enlarged, and there were no fibroids in its substance as far as could be made out. Certainly none were visible on the external surface. On the left side there was an ovarian cyst about the size of a cocoanut, closely adherent to the uterus, and with a broad attachment to the broad ligament. This was slowly detached, the stump both of the broad ligament and along the side of the uterus being ligated with interrupted silk sutures. A smaller tumor of the same kind was found on the right side and was also removed. The question of removing the uterus was discussed, but as there was no apparent tumor, and the operation had already lasted over an hour, it was thought best to leave it. I was the more ready to do this since I had had a number of cases where uterine hemorrhage was a prominent symptom of adherent cysts of the ovary, and I hoped by removing the tumors and bringing about the menopause to check both the flowing and the formation of the polypi.

The convalescence following the laparotomy was uneventful, and it was confidently hoped that the long series of gynecological events had come to an end. Such was not the case however. February 8, 1897, about two months after the last operation, another polypoid mass was discovered, and removed on February 19th.

Through the spring and early summer the patient's general condition was fairly good, though it could not be said to be first-rate. There was considerable discharge, which at times was bloody, and her strength did not return as was expected. In July she had an illness at her home in the country which, while associated with some flowing and discharge and pain, was not definitely attributable to any uterine condition. I saw her at the time, and found no reason in her local condition for interfering.

In October, 1897, she began to flow and also to have pain, which would come on usually at a certain time of day, attain a good deal of intensity, and last from one hour to two or three. This was situated in the lower abdomen, somewhat to the right side, about the location of the right ovary. Examination repeatedly made revealed nothing but a slightly enlarged uterus, with nothing to account for the pain. There was considerable discharge, both blood and small grayish or reddish masses, which were twice examined by Dr. Whitney and pronounced merely blood clot, without any evidence of tissue. At this time she began to take morphia in very small doses, one-twelfth often sufficing to relieve the pain completely.

Although it seemed probable that some operation would be eventually necessary, yet in the absence of any direct evidence of a malignant growth there were certain very strong reasons involving family complications against any operation which might have a fatal termination. Through the winter of 1897 and 1898 her condition varied within moderately fixed limits. At times there was discharge and some flow, at others she was practically free. The pain varied greatly, at times interfering only slightly with her usual occupations, but sometimes so intense as to sap her strength and confine her to the bed or house for some days. She lost flesh, became sallow, and her nervous system, which was naturally very strong, showed the effect of the prolonged strain.

By the middle of April, 1898, it was thought best to explore the interior of the uterus more thoroughly, and a curetting was done on the 13th, which resulted in the removal of a mass of tissue which Dr. Whitney described as follows: The mass from Mrs. X consisted of a fragmentary, soft polypoid, necrotic and hemorrhagic tumor of considerable size. Microscopical examination showed a more or less homogeneous mass of small round cells, which were vascularized by relatively large thin-walled blood vessels with extensive hemorrhage and degeneration of the cells. The cells were mononucleated, rather elongated and irregular, and were of the type of connective-tissue cells. There is no evidence of any epithelial growth, and from the history taken in connection with the microscopic examination the diagnosis of a small round-cell sarcoma is justified.

This diagnosis rendered an operation necessary, so on May 5, 1898, at St. Margaret's, a hysterectomy was performed. The operation was a difficult one. It was begun by the vagina, the uterus being first curetted and packed. The vaginal mucous membrane at its junction with the cervix was then divided with the Paquelin cautery and an attempt made to tie or clamp the broad ligaments. Owing to adhesions and thickenings due to the double oöphorectomy previously done, this was found to be impossible, so the abdomen was opened, and the operation completed by that route. It was a long and tedious operation, but the patient stood it very well.

The convalescence was marked by two unusual events. On the third or fourth day the abdominal incision broke down and discharged a large quantity of foul-smelling pus. The abscess had burrowed between the layers of the abdominal wall, but did not, as far as I could make out by careful probing, communicate with the peritoneal cavity. For days there was considerable difficulty with nourishment, the patient vomiting frequently, and the bowels moving irregularly. She had considerable pain and required some morphine for its relief.

On May 15th, ten days after the operation, the evening temperature was 101°. The patient had had considerable pain all day, but the bowels had moved twice, and she had taken a fair amount of nourishment. On the morning of the 16th she vomited, appeared listless and indifferent to her surroundings, and disinclined to talk. The temperature had dropped to 98°. Throughout the day it continued to fall, and at 7.30 in the evening reached its lowest point, 95.08°. The pulse grew more rapid, and ranged from 110 to 120. She was given champagne in small quantities, enemas of salt solution, with brandy, brandy and ice by the mouth, strychnine, one-sixtieth grain, several times. She was not able to take any nourishment. Urine was passed at intervals, but the whole amount for twenty-four hours was small. The bowels moved by enema. Her general appearance was bad, and at my late evening visit I felt there was considerable doubt if she would live until morning. The temperature began to rise in the night, and the next morning was 99°, rising to a little over 100° that night and then dropping slowly day by day until in a week it was practically normal. With the reaction the pulse rose in frequency, reaching 135 on the evening of the 17th. Dr. Lovett saw her with me in this attack, and we felt we could eliminate septic peritonitis, or in fact any septic process, and I must confess I am to this day puzzled as to what caused this sudden change.

The convalescence was now rapid, the abdominal wound closed, and the patient went home at the end of four weeks. I have examined her within a week and

her condition is one of apparent perfect health now, nine months after the operation.

Dr. Whitney reported on the uterus as follows:

The preliminary examination of the tumor of the uterus from Mrs. X shows it to be a myxosarcoma which has started in the fundus, thus confirming the diagnosis made earlier from the scrapings.

SARCOMA OF THE UTERUS.[1]

BY WILLIAM F. WHITNEY, M.D., BOSTON.

SARCOMA of the uterus has been recognized for a long time though comparatively a rare affection. Geisler computed that it occurred in 1.2 per cent. of uterine tumors, and its relations to cancer and fibromyoma were in the proportion of 1 to 50 of the former and 1 to 36 of the latter. Without imposing too much upon your patience, I can only give what may be regarded as a short *résumé* of the results of observations upon this disease.

In the first place comes its clinical course and prognosis, and in the second its anatomical aspects.

In studying its history from the recorded cases we are met with the obstacle that they are rarely finished. Thus while the earlier history is fairly well given and the operative procedures for relief, the final outcome is often uncertain. So that whether treatment will prolong life and mitigate suffering must be for the present and future to decide, rather than the past, with its death list from sepsis.

In an analysis of 81 cases in which the age was given, there were found 12 before thirty years of age, and 70 between thirty and sixty-one years (the oldest), or dividing them at forty-five years (the climacteric), it was found that 26 occurred before and 45 after that period.

Or to put it in a way to be more easily remembered, it may be said that sarcoma of the uterus rarely occurs after sixty years of age, and that it occurs six times as often in the last half of that period as in the first half, and that the greater number occurs between the age of thirty-five and fifty-five years.

In regard to duration the analysis is rather more vague. But dating from the first appearance of symptoms till the end of the time of the published record of 57 cases, it was found that in 18 it had lasted two years, in 19 from two to six years, and in 22 under two years.

In dividing these up by decades it appears that a larger number of the longer cases falls between thirty-five and forty-five. This is perhaps natural, as during this period the vital forces are strongest and best capable of resisting the wasting effects of the disease.

The most prominent symptom is hemorrhage, being absent in only one case in which the symptoms were especially mentioned. Pain is often present.

Of the objective symptoms, enlargement of the uterus is very constant, with a tumor sometimes presenting at the os, or within the vagina, as a rule with a smooth surface, sometimes lobulated and not deeply ulcerated.

Death usually occurs from anemia and debility; metastases being rare, and when present often found in the lungs.

The differential diagnosis between this and cancer, or fibromyoma, will depend, in the greater number of cases, upon a histological examination. The etiology is as obscure, and as yet nothing which can even be regarded as a predisposing cause has been suggested. Age as a factor differs from that of sarcomas elsewhere, as we have seen that it occurs oftener after forty than before.

With this brief summary the clinical aspect of the disease can be left.

Upon the anatomical and histological characteristics we are much better informed, and numerous interesting facts have been brought out. Sarcomas are found starting from the fundus or the cervix, the latter presenting some peculiarities that have placed them in a class by themselves. Those of the fundus are subdivided by their place of origin, whether in the mucosa or in the wall proper. And to these is added a class which starts from the decidua or villi of the chorion, about which at present there is an active controversy. But this will be left out of consideration as it would take too much time.

The richly cellular tissue lying between the uterine glands needs but little change in the energy of its growth and the shape of its cells to become a sarcoma, and it is only to be wondered at that it does not occur more frequently. In its gross appearance it is a smooth, more or less lobulated, often polypoid growth, circumscribed or extending more or less completely over the entire endometrium. The glands may atrophy or keep pace with the development of the new growth, either preserving their typical form or becoming solid strings; in the latter case the variety of carcino-sarcoma is produced. Later the uterine wall may become involved and invaded, and a great development of blood-vessels take place with extensive hemorrhage. The case which Dr. Davenport has reported would illustrate a round-cell sarcoma of endometrial origin.

With the elongation of the cells the spindle-cell type is produced, associated, in a few cases, with multinuclear or giant cells. Those starting around the sheath of the blood-vessels (perithelioma), as well as those with a hyaline degeneration of the vascular walls (cylindroma), have also been reported, and in short all the varieties which the ingenuity of the histologist has been able to devise have been found here.

In the wall of the uterus the tissue between the muscular fibres may be the place of origin, or it may arise from the degeneration of a fibromyoma. For a long time such a change was considered probable from the appearances to the eye, but the microscopic proof of this was furnished by two independent observers, Williams[2] and Pick,[3] at the same time, who have shown the direct metaplasia of the muscular fibre into sarcomatous tissue, and Van Kahlden,[4] who has described the same change of the fibrous tissue.

To the eye the sarcoma of the wall appears as soft, homogeneous, pale reddish-gray nodules which may grow into the cavity of the uterus as polypoid masses, and in their advanced stages their point of origin is not always easy to make out and often requires careful study. The peculiar form which occurs in the cervix has been well presented by Pernice[5] and Pfannenstiel,[6] and the latter has collected twelve cases. He designates it as a "botryoidal (berry-like) sarcoma of the

[1] Read before the Obstetrical Society of Boston, February 21, 1899.

[2] Williams: Zeitsch. f. Heilkunde, Bd. xv, S. 141.
[3] Pick: Arch. f. Gynec., Bd. xlviii, S. 241.
[4] Van Kahlden: Zeigler's Beitrage, Bd xiv.
[5] Pernice: Virchow's Arch., Bd. cxiii, S. 46.
[6] Pfannenstiel: Virchow's Arch., Bd. cxxvii, S. 305.

cervix." It occurs chiefly at puberty or towards the climacteric, and in all the cases so far described has been fatal. It appears usually as a polyp, in some cases so deeply lobulated as to look like a mass of red berries (from whence its name).

In several cases the orginal growth has been removed, and the microscopic examination has shown the character of a simple mucous polyp; later it has recurred and cells of varying size and shape have been found. Usually the later structure is that of an edematous fibroma, to which in a few cases a second tissue cartilage or striped muscular fibre of an embryonic type has been joined.

It has been suggested that as yet a radical operation (hysterectomy) has not been done in any of these cases, from the apparently benign character of the primary growth, and that the prognosis should not be worse than in other sarcomas, since metastases are infrequent.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Meeting of February 21, 1899, the President, Dr. Alfred Worcester, in the chair.

Dr. F. H. Davenport read a paper entitled

A CASE OF SARCOMA OF THE UTERUS.[1]

Dr. E. H. Mackay read a paper entitled

A CASE OF MYXOSARCOMA OF THE UTERUS AND VAGINA, FROM THE SERVICE OF DR. J. G. BLAKE AT THE BOSTON CITY HOSPITAL.[2]

Dr. R. G. Wadsworth read a paper by Dr. S. J. Mixter entitled

A CASE OF SARCOMA OF THE UTERUS.[3]

Dr. W. F. Whitney opened the discussion.[4]

Dr. J. G. Blake said that his case had been very interesting and to him a unique one. The vagina was filled with a large fungous-looking mass, which on examination by the pathologist was said to be a spindle-celled sarcoma.

Dr. Whitney said that Dr. Davenport's case was probably of endometrial origin. He regretted that the changes in Dr. Mixter's case could not be followed; also that an autopsy could not be obtained.

Dr. Pearse said that Dr. Blake's case started from the uterus and involved the vagina. The growth was a giant-cell spindle sarcoma, which is very rare, Williams finding giant cells in only 12 out of 100 cases.

Dr. Engelmann said that he had always looked upon the growth as developing subserous or submucous like the fibromata, instead of, as Dr. Whitney said, from the muscular layer. He always advised a radical operation after one thorough curetting. He thought he had seen cystosarcomatous degeneration after treatment; he has never seen sarcoma developed in the vagina or cervix.

Dr. Washburn had seen one inoperable case develop in the fundus; the patient lived six months and died of exhaustion.

Dr. Whitney said while the development of sarcoma from the muscular elements of the uterus was not common, yet he believed such change does take place. It was often very difficult to decide whether the growth was from the muscle or the submucous tissue. The cases of Williams, Pick and others seemed to support the theory that there is a direct transformation of the unstriped muscular fibres into sarcomatous tissue. These cases should have an early radical operation, and the prognosis would be certainly more favorable than in carcinoma, as they do not invade other tissues or form metastases as early or rapidly as in that disease.

Dr. Davenport said delay in the final radical operation in his case was because of several curettings for examination, etc.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at the Academy of Medicine, in New York City, May 9, 10 and 11, 1899.

(Concluded from No. 8, p. 199.)

Dr. Otis read a paper by Dr. R. H. Babcock, of Chicago, entitled:

ALTITUDE AND HEART DISEASE, WITH REPORT OF CASES.

Dr. Henry Sewall: All discussion as to the effects of altitude on heart disease is based on theories of the mechanics of circulation, of which we know very little. My colleague, Dr. W. H. Bergtold, tells me that his results of study of the blood in Denver show a very extraordinary increase of specific gravity. It is stated on good authority that preceding a loss of compensation in heart disease we have a sudden diminution in the specific gravity of the blood. For a long time I have given particular attention to conditions of circulation in people living in Colorado, and I am convinced that in most normal hearts there is an overtaxing of the right side which persists for some days or weeks after arrival in that region. The proofs of this lie in observations upon the reduplication of the heart sounds. The observations I have made from a clinical standpoint agree quite closely with those made by Dr. Babcock. After a little while, the signs which indicate this overburdening of the right heart disappear in those cases which do well, but not in those cases which do badly. Mechanically, the heart can stand more insult than any other organ in the body. This has been shown by the experiments of physiologists on mammalian hearts. This overloading of the right side of the heart which is evidenced during the early stages of a sojourn in high altitudes is easily explained by the increased aspiration of blood into the thorax; compensation occurs later in the increased capacity of the lungs. After the right heart becomes stronger and the pulmonary capacity is increased the circulation will go on quite well.

I have had under observation for some months a patient with marked mitral stenosis who came to me from Chicago, where she had been under the careful observation of Dr. Babcock. When I saw her about six months ago during her last trip in Colorado, I questioned her carefully as to the effect of various altitudes upon her condition. She said she could stand Colorado Springs, with its altitude of 6,100 feet, with

[1] See page 214 of the Journal.
[2] See page 213 of the Journal.
[3] See page 212 of the Journal.
[4] See page 216 of the Journal.

only fair comfort; in Denver, 5,280 feet, she was just as comfortable as in Chicago, and better than in Los Angeles; but at Cripple Creek, with its altitude of 9,300 feet, she at once began to feel uncomfortable, and at the end of a week broke down completely. Two months ago I saw the patient through an attack which had come upon her in Cripple Creek. She soon after returned to her normal condition.

DR. CHARLES E. QUIMBY, of New York: For seven years I have been treating all forms of valvular and mural diseases of the left heart, with the exception of mitral stenosis, by pneumatic differentiation. There is no other therapeutic measure whose action is so definite or constant. While it is true that liquids are incompressible, nevertheless in the treatment of cardiac disease we must recognize a force that is developed by blood compression.

DR. BABCOCK: I am very sorry that I did not hear more from our Colorado contingent, for I began to be very shaky about the correctness of my theory. Practical experience is worth more than theory, and these men have all had experience with cardiac patients which might entirely upset the theory that the rapidity of the circulation was the cause of the disturbance of the heart in certain cases. Particularly was I overwhelmed last night when Dr. Sewall informed me that one of my patients with pronounced mitral stenosis was walking about Denver in comparative comfort. Nevertheless, I think that as a rule the principle can be laid down that mitral or aortic stenosis should be regarded as contraindications to a residence in high climates, also when there are complications such as pleuritic adhesions. One individual with a certain degree of mitral stenosis can endure the altitude of Denver while another with a similar lesion cannot endure a much lower altitude, and it is hard for us to explain this. The explanation will probably be found in some change in the myocardium, perhaps a degeneration, which, when co-existing with valvular disease, will determine whether or not patients can sojourn in certain altitudes. My paper was simply offered in the way of a suggestion, and in the hope that it would stimulate the members of this Association to report more cases of this kind, and to lead them to realize that the mere existence of cardiac disease does not, *per se*, contraindicate a sojourn in high climates.

DR. S. EDWIN SOLLY, of Colorado Springs, read a paper on

RECENT INQUIRIES CONCERNING BLOOD CHANGES INDUCED BY ALTITUDE.

All admit that there is a real or apparent increase in the number of red blood cells within a day after ascent to a high altitude; the hemoglobin and specific gravity of the blood also increase; on returning to a lower altitude these factors decrease, but a secondary rise follows. Experiments upon animals in bell-jars proved that blood taken from the aorta and liver showed an increase of from 20 per cent. to 50 per cent. in the number of red cells as the pressure increased. A short time after the animals were removed there was a decrease and then a rise which persisted so long as the animals were under observation. Anæmic children were observed to have an increase after being sent to the mountains, and a persistent increase after their return. The number of red cells has been noted under these experimental conditions to be the same in blood taken from aorta and liver as from peripheral vessels.

Dr. Solly holds that the increase of red cells on ascending to an altitude is real and not apparent, and he made a request that physicians would make careful records of the blood before sending patients to Colorado. It was urged that the Association take the matter in hand and appoint a special committee to conduct such an investigation.

DR. E. O. OTIS: When Dr. Solly read his exceedingly interesting paper last year before the Philadelphia County Medical Society, I expressed myself then as not convinced from the proof which he adduced that the polycythemia to which he referred was a genuine one and not limited to the peripheral vessels. I still do not feel quite sure that this is a true polycythemia. Is it a fact that the whole mass of blood is increased, and are the experiments which have been made thus far conclusive? We have, it is true, the experiments of Egger, who found this polycythemia in the blood taken from the deeper vessels, and we have these further experiments as narrated by Dr. Solly. Granting the fact that there is an actual increase of red blood corpuscles in the whole mass of the blood, how do you explain the fact that there is a rapid destruction of them on returning to the sea-level without, apparently, any more signs of general destruction than we know does occur? Why is such a return to the level not accompanied by the symptoms which occur when a similar destruction is the result of ordinary disease, as in icterus and hemoglobinuria?

Dr. A. JACOBI: There is one point that struck me, namely, the disproportion between the increase of red blood cells and the hemoglobin. This, I think, is a very common occurrence, and it should not be attributed to the effects of altitude. We see it continually in convalescents. Yesterday I examined the blood of a boy of seven years who, six weeks ago, after having been anemic all winter, had three and one-half millions of red cells and from seven to eight thousand leucocytes, and 60 per cent. of hemoglobin. His breathing was shallow, but he was fairly comfortable as long as he did not exert himself. Yesterday he had four and one-half millions of red cells, and fifteen thousand leucocytes, a proportion of one to three hundred, and only 56 per cent. of hemoglobin. The disproportion sets in during slow convalescence. I have frequently seen the same thing before, and certainly the condition cannot be attributed to the effect of altitude alone.

DR. JUDSON DALAND: Those men who have been working with blood most confess that although their methods are the most accurate in existence considerable variation in the results exists, which to some extent vitiates their value. For example, in examining the blood of twenty-five persons, all presumably in good health, with the instrument of Thoma-Zeiss, the variations in the count of red corpuscles ranged from two to five hundred thousand, the count being made from the same drop of blood by two different observers. In making our calculations we count sixty-four squares, and the number of corpuscles actually counted in proportion to the whole number contained in the cubic millimetre is comparatively few, so that a slight error by multiplication amounts to considerable. We observe also in using the hematokrit, that the question of the size of the corpuscle comes in.

Each corpuscle occupies a certain amount of space, and this again causes inaccuracy. In using Fleishel's hemometer, the colored dilution of the blood compared with the colored wedge of the glass may cause mistakes. A variation of five per cent. or less I consider legitimate. Another point is that the light in the hemometer should be properly regulated. Very frequently, if the light is strong, we are unable to make a comparison. Still another point is to reduce the area which is under observation, cutting down a large area to a narrow slit, thus minimizing the chance of error, and what we call focusing the eye of the observer upon the wedge shaped piece of glass deserves consideration, as if you place the eye directly over the narrow slit your count is more apt to be correct.

Whether there is or is not an actual increase in the number of red blood cells per cubic millimetre resulting from high altitude I do not know, but it seems to me that it is fairly safe to conclude that there is a blood regeneration. The general effect of the climate in high altitudes is usually beneficial; there is an improvement in the general health, and the blood-making process is a part of that. We may therefore reason from that point of view. In those cases where a diminished quantity of air enters the chest there is a corresponding diminution in the amount of hemoglobin and the number of red blood cells. The red blood corpuscle is more or less the index of the amount of oxygen required by the body, and we can have a very rapid increase in the number of red blood cells without a corresponding increase of hemoglobin. Where we have large volumes of air enter and leave the chest there is a greater demand on the part of the body for oxygen, and nature's response to that would be the production of a larger amount of hemoglobin and probably of hemoglobin carriers.

DR. B. P. ANDERSON, of Colorado Springs, read a paper on

INTERMEDIATE ALTITUDE FOR THE CONSUMPTIVE.

He said: My experience has been that in some of this class of cases benefit is received by a change to an intermediate altitude, and for the past several years I have urged such cases to seek temporarily an altitude of from 3,000 to 4,000 feet above the sea-level, and, if benefited, to remain until all active symptoms disappear. Following this advice, the rule has been that such cases were enabled to return to the higher altitude of Colorado Springs, and upon the second trial improvement continued. Experience has again taught the pertinent fact that the class of cases coming under observation which do not improve or show evidence of a subsidence of active symptoms after a residence of five or six weeks will not be benefited by longer stay, but, on the contrary, will continue to lose ground, and should be ordered a change at once. In advocating the change to a lower or intermediate climate I would be understood as meaning those cases which we term curable, or at least in which a favorable prognosis has been given. In the selection of the most favorable climate for such cases I was largely aided by having my attention called some eight years since to the Mesilla Valley, in New Mexico — a valley situated about forty-five miles northwest of El Paso, Texas. Invalid patients coming to Colorado for the cooler summer months, after having spent the winter in this valley, were the first to attract my attention. Their enthusiasm as to dryness, sunshine, the greater number of days one could remain in the open air, etc., did not impress me so much — all of which advantages we have here in Colorado — as did the fact of their improvement, which could only be attributed to the advantage of altitude, which averages from 3,500 to 3,800 feet, combining with its lower altitude the important essential of a maximum amount of sunshine and dry air. Commencing with the fall and winter of 1892, I have regularly advised those patients who for the most part did not progress favorably in Colorado to seek this climate. Since 1892 I have a record of somewhat more than 200 cases who spent the winter months in this climate. My record embraces many cases in the various stages of advancement of disease, and many were complicated with laryngeal tuberculosis. The subsequent history of these cases shows that a large majority, or 70 per cent., improved, and are still living.

DR. LEONARD WEBER, of New York: I think it is safe to say, after listening to this paper, that the medical profession both in this country and on the other side of the Atlantic are all agreed that what the consumptive wants is pure air, and I think the time is approaching when high altitude will not be considered of such paramount importance in this connection as it was some years ago. This change of opinion has been brought about by the fact that good results in the treatment of phthisis are being obtained in sanitaria situated at altitudes of only 300 feet or even less above the sea-level.

It has always been my practice in the treatment of incipient pulmonary tuberculosis, particularly when the disease is unilateral, to send such patients — providing there be no contraindications in the way of heart or kidney trouble — either to Davos, in Switzerland, or to the Rocky Mountains, or to Southern Texas or Colorado, because I have found that in those regions they were more apt than elsewhere to recover from their disease, or at least have progress stopped.

In a second class of patients, where the disease is more advanced in one lung, and I suspect beginning infiltration in the other, together with considerable fever and an irritating cough, my experience has taught me that they do better at moderate altitudes, say about 3,000 feet above the sea-level, in regions such as the author of the paper mentioned. Of course, we all know of even advanced cases, with hemoptysis, that improved at very high altitudes, but I know of other instances where such patients when sent to Colorado did not do well at all and had to return to lower levels.

DR. NEWTON, of Montclair: In connection with this subject of sending our patients away to various places where they may get the benefit of the altitude, we should not lose sight of the question of proper food to suit an impaired or feeble digestion. I have seen men out on the frontier who could eat almost anything and thrive on it, but when we are dealing with patients who suffer from the indigestion so common in pulmonary tuberculosis, they had better be kept at home unless we are convinced that they can obtain proper food elsewhere. We cannot fight tuberculosis with poor food. The digestion should always be kept well in sight — much more so than it usually is. A cheerful disposition and good digestion will help a man to recover from pulmonary tuberculosis, at home or elsewhere, while a man who is easily discouraged and who suffers from poor digestion will be handicapped in the best of climates.

Dr. James B. Walker, of Philadelphia, read a paper on

CLIMATE IN RELATION TO RENAL DISEASE.

He considered the influence of variability of temperature and dampness, particularly of the soil, on persons afflicted with renal diseases. In winter, when patients were not inclined to do so well as in summer, he was in the habit of sending them to Lakewood or Atlantic City.

Dr. Coleman, of Augusta, Georgia, testified to the comparative infrequency of renal disease in the South. The negroes have it more commonly than the whites, owing to poorer clothing and less hygienic surroundings.

Dr. Judson Daland, of Philadelphia: I was interested in listening to Dr. Walker's paper on the subject of the effect of climate together with the state of dryness of the air and soil on renal disease, and was glad to hear food mentioned in connection with the subject. Probably this food question comes in a little stronger than one might infer from the paper. That a distinction should be made between a winter diet and a summer diet is perfectly clear to us all, and perhaps in the very climate to which he referred the dietetic reactions are shown the soonest. Another point is the quantity of food that is required in different climates. In a warm climate the food required would probably be from fifteen to twenty per cent. less than in a cold climate, and in addition to that you get the benefit of freer action of the skin, and also the action of water, which is taken in larger quantities in such climates.

Dr. Newton: I wish to add my testimony to the value of such a climate as that of Northern Texas in kidney troubles. I do not remember having seen more than one case of Bright's disease during my four years' residence at Ft. Elliott, which is located in what is known as the Panhandle district of Texas. There the climate is very dry and the people are so dry that they drink all they can get, including a great deal of whiskey.

The rarity of Bright's disease in Texas is referred to in the writings of Dr. H. C. Wood. The subject is a very important one, and is certainly worthy of further investigation.

Dr. Phillips, of Washington: The Doctor attributes the benefit derived by nephritic patients who are sent to Lakewood and Atlantic City to the dryness of the soil and atmosphere. The soil of Atlantic City may be dry, but the air there is much damper than it is, for example, at Philadelphia. To explain the beneficial effects derived there by patients, we must look to something besides moisture. Atlantic City has a much more equable temperature than Philadelphia, the diurnal variations being much less; the temperature does not go up so high during the day nor fall so low at night, and for that reason the patient is better able to protect himself with proper clothing. I think the benefit derived by patients suffering from renal disease in certain regions, at least along the Atlantic seacoast, is due more to the temperature than to the moisture. In very dry climates, where perspiration is free and the skin does most of the work, the kidneys are a less important factor.

Dr. S. A. Fisk, of Denver, stated that he rarely met with a case of Bright's disease in the Rocky Mountain region, and stated his belief that simple albuminuria is not a contraindication for sending a patient to Colorado; on the contrary he finds that such patients do very well. He cited a case under his observation ten or twelve years that corroborated his view.

Dr. Henry Sewall, of Denver, laid stress on the variability of climate, the constant changes producing irritation, especially when the organs are diseased. In a moist climate conduction is more rapid, chilling is more intense, and the congestions of the internal organs more severe. Dr. Sewall claimed that, because of the altitude, radiation and evaporation are rapid and the temperature equable, therefore sudden chilling of the body surface and internal congestion are less liable to occur.

Dr. L. D. Bulkley, of New York, stated that thirty years ago, while an interne at the New York Hospital, he had albuminuria. He left the hospital, lived on a milk diet, and was told that he could not live very long in New York. He thereupon decided to go to Brazil, but was detained at home. During these thirty years he has had several severe attacks of albuminuria, and one of his sharpest attacks occurred while he was travelling in the Yellowstone Park, where the air is certainly very dry.

While Dr. Bulkley does not entirely accept the statements made regarding the value of climate in renal disease, he said that the condition of the atmosphere has a decided influence upon the frequency of micturition. On certain days the urine will diminish to a few ounces, while on other days urination will be very free. As regards treatment, he lays the greatest stress on the diet and the care of the skin, referring not so much to bathing as to the constant application of woolen garments to the skin, both night and day. This he has practised for years. In addition to this, he drinks a quart of milk daily on an empty stomach. This causes a certain amount of diuresis.

Dr. Bulkley gave these details to show that it is possible for a person with marked albuminuria to live in New York City for at least thirty years, providing he takes proper care of himself.

Dr. N. S. Davis, Jr.: A few days ago I was looking over Dr. Stillman's book, "The Life Insurance Examiner Searching for Statistics," and I happened on figures relating to this subject, the geographical distribution of renal affections. In that book there is a table giving the mortality derived from 5,000 fatalities among insured cases in each of the following groups of States: In the New England States and New York the mortality from renal affections was 3.5 per cent.; in Michigan, Wisconsin, Minnesota and Nebraska, 1.4 per cent.; in New Jersey and Pennsylvania, 3.1 per cent.; in Ohio, Indiana, Illinois, Iowa and Kansas, 1.9 per cent.; in Delaware, Maryland, the District of Columbia, Virginia, Kentucky and Missouri, 2.1 per cent.; in the Southern States, 2.4 per cent.; in Washington, Oregon, California, Utah, Dakota and New Mexico, 2.6 per cent.

It would appear from these statistics that the lowest mortality from renal affections occurred in the northern part of the Mississippi valley, while the highest was in the four Western States, namely Washington, Oregon, California and New Mexico. The next highest mortality was in the Middle Atlantic States and New York.

Dr. Newton: I would venture to suggest that life insurance statistics in northern Texas are apt to

be misleading, as it is rare out there to find a man who has his life insured. The majority of these are invalids from other localities and their death-rate would be naturally high.

DR. CHARLES F. MCGAHAN, of Aiken, read a paper on

THE NEED OF MUNICIPAL CONTROL OF THE FUMIGATION OF APARTMENTS OCCUPIED BY TUBERCULOUS PATIENTS AT HEALTH RESORTS.

He said: I have seen apartments in which have been the worst cases of phthisis disinfected in the most superficial manner, and a few days later have been called to the same rooms to see a case showing only the first symptoms of phthisis. Many take apartments without consulting a physician for weeks or months. Landlords are ignorant as a rule of methods of disinfection, and simply make a farce of it. Every room offered for rent at a resort frequented by tuberculous patients should have a certificate attached to it stating it to have been thoroughly disinfected under the auspices of the board of health or sanitary inspector, and that it is, in the opinion of the board, perfectly healthful. Dr. McGahan advocated laws against the spitting nuisance.

DR. E. O. OTIS, of Boston, stated that in Boston the Board of Health is willing to disinfect any apartments which have been occupied by a consumptive, but this is not compulsory. Dr. Otis detailed the system adopted in Cannes, France. There the proprietor of a hotel or villa is notified by the attending physician that a room or apartment which has been occupied by a tuberculous patient, or in which one has died, must be disinfected or renovated before it can be again occupied. The proprietor takes this notification to the sanitary authorities; the disinfection is made by them, and they return the original card of notification to the physician, with a note on it that this has been done. In the mayor's office is a list of hotels and villas whose proprietors agree to conform to these suggestions. Physicians make use of this list and it is mutually advantageous.

DR. GUY HINSDALE: I appreciate very highly the importance of the suggestions contained in Dr. McGahan's paper, and I believe they would do much good if they could be brought to the attention of hotel-keepers in a manner that would appeal to the success of their establishments. The Pennsylvania Society for the Prevention of Tuberculosis has issued a tract on this subject which has been widely circulated, over 10,000 copies having been sent out. It is entitled, "How Hotel-keepers Can Assist in Preventing the Spread of Tuberculosis." We ought to decide upon a practical and efficient method of disinfecting an apartment which has been occupied by a tuberculous subject. Probably the best way is by the action of sunlight. In addition to this, or instead of it, some advise scrubbing with a strong corrosive-sublimate solution or the use of formaldehyde. A paper properly drawn up by this Association and widely circulated would do good.

DR. MCGAHAN: This subject is now being agitated in my home at Aiken, where some members of the Board of Health are in favor of adopting a system of fumigation, while others are not. Unless the fumigation is thorough it is practically useless. The apartments at the various hotels are successively occupied by different classes of patients, some of whom are careful about expectoration, while others are not. I do not think that we can rely upon the proprietors themselves to attend to the proper disinfection of their apartments. A regular system should be organized and carried out, and it seems to me that the health authorities are the proper persons to take hold of it.

(To be continued.)

Recent Literature.

Degeneracy: Its Causes, Signs and Results. By EUGENE S. TALBOT, M.D., D.D.S., etc. Pp. xvi, 372. With 120 illustrations. London: Walter Scott. 1898.

Of late years "degeneracy" has become a favorite phrase, and newspaper science and Nordau's sky-rocket book have done much to make it the fashion. It is a question, however, whether the foundations of this new "science" are quite so firmly established as some writers claim and whether, after all, it is not somewhat akin to the pseudo-sciences of physiognomy and phrenology. That there is a portion of truth in all the talk about "stigmata of degeneracy" is certain, but the importance of these stigmata is too often overrated, and many writers group among the stigmata every deviation from the normal, both physical and mental, whether congenital or acquired, so that everything, even symptoms of local disease of external and accidental origin, is regarded as significant of the degeneracy of the individual. That there is a class in every community which may fairly be regarded as degenerate is certain, and it is also true that in this class we find a much larger percentage of deviations from the normal type in their physical make-up than we do in presumably healthy individuals. It is, however, going too far to consider these deviations, which may occur with less frequency in the healthy, as proof or even as important indications of degeneracy in the individual. It is, furthermore, hardly fair to class the weaklings in the community who become defective on account of some acquired defect in early life with those who are defective from birth from hereditary causes, and to draw conclusions from the two classes combined. This, however, is the tendency of many of the writers on degeneracy, and the volume before us is not free from that error. It is, however, an interesting popular presentation of the subject of degeneracy. Much of it is, of course, a compilation, showing a diligent but not always discriminating study of many contributions to the subject. In the study of anomalies of the face and jaws, however, the author gives many interesting results of his own long and careful observation. The book is an interesting and valuable review of the subject, exaggerating, as is not unnatural, its importance.

Clinical Lectures on Neurasthenia. By THOMAS D. SAVILL, M.D. Pp. xv, 144. London: Henry G. Glaisher. 1899.

These lectures were delivered at the Welbeck Street Hospital for Diseases of the Nervous System as a part of the post-graduate course in 1897–1898. The author claims that the subject "is either not referred to at all or is very inadequately dealt with in the text-books in current use." If that were the case

they might be of some assistance to the practitioner and student, but in point of fact they are so far behind our present knowledge of neurasthenia, both as to symptomatology, pathology, prognosis and treatment, that we can see no reason for their publication.

A Treatise on Aphasia and other Speech Defects. By H. CHARLTON BASTIAN, M.A., M.D. (Lond.), F.R.S. Pp. viii, 366. With 31 illustrations. New York: D. Appleton & Co. 1898.

This volume, which includes the Lumleian Lectures delivered in 1897, is an exceedingly valuable contribution to this complicated and much discussed subject. The author's own researches in the subject are well known, and in the present volume these are supplemented by the reports of many other cases, making a total of one hundred and fourteen, and by a thorough review of the literature of the subject. The author's own views upon the vexed questions of the functions of speech are well known,— that the so-called motor centre is really a kinesthetic centre, that there is a writing centre distinct from the speech centre and that the proof of Broadbent's ideational centre is still lacking. These views are maintained with great skill and a strong array of evidence. Since the publication of the book the author's position in favor of a separate graphic centre, as opposed to the views of Dejerine, Miraillié, Collins and others, has received striking confirmation by the remarkable case of Gordinier. While somewhat less elementary and systematic than the work of Wyllie, and therefore less adapted for the beginner, the wealth of illustrative material and the philosophic judgment displayed will render it for a long time one of the standard treatises on the subject.

On the Relation of the Nervous System to Disease and Disorder in the Viscera. By ALEXANDER MORISON, M.D., F.R.C.P., etc. Pp. xiv, 132. With 39 illustrations. Edinburgh and London: Young J. Pentland. 1899.

This is a reprint of the Morison Lectures delivered before the Royal College of Physicians in Edinburgh in 1897 and 1898 by the grandson of the founder of the lectureship and published just a century after that founder graduated from the University of Edinburgh. The subject, although somewhat different from the usual theme of those lectures — the study of mental diseases — is one too much neglected and still obscure. The lecturer has summarized our present knowledge of the histology of the nerve supply of the viscera, with its physiology and pathology, and has added the results of his own study of the nerves of the uterus, the heart and the cerebral blood-vessels. The relations of the nervous system to disease in the viscera are still vague, but their importance is unquestioned, and these lectures afford many valuable hints in showing the need of further study and the limitations of our present knowledge.

IT is stated that the increase in the number of women students at German universities during the last few years has been remarkable. In 1896 there were only 177 at the ten leading universities, but at the beginning of the present year the number had risen to 414. Most of the women take courses in philology or philosophy. Only 16 have studied medicine, six theology, and six law in the last four years. — *Journal of the American Medical Association.*

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EMERGENCY STATIONS.

WITH the recent closing of the Emergency Hospital for lack of funds, the important question is at once forced upon the City Government and the medical profession as to whether emergency stations shall be established under a different organization.

There are several points to be considered: First, are such hospitals needed in a large city? Secondly, if needed, how may they best be supplied? Thirdly, what are their limitations?

In answer to the first question we may unhesitatingly say that emergency stations are needed. As a city grows, the opportunities for accident are evidently proportionately increased. The distance to hospitals already established is often too great, even with the best possible ambulance service, to justify removal of a patient without some preliminary aid in the way, for example, of checking hemorrhage, or stimulation. It is possible in cases of hemorrhage and severe shock for a patient to reach a hospital in a moribund condition, who, at least, would have had a better chance for life had there been the possibility of intelligent treatment near at hand. It is just that small remaining amount of strength that needs to be utilized at such critical times and not exhausted by a more or less rough ambulance ride of perhaps several miles. Unquestionably, then, any well-regulated city needs emergency stations in number proportionate to its size, in order that no accident within the confines of the city may happen far from adequate surgical or medical aid. This much a city owes to its employees and citizens.

Granted, then, that such stations are needed, how may they best be supplied? In our opinion, they should be provided by a city as an integral part of its hospital organization. Boston, for example, boasts one of the most completely equipped and well-managed city hospitals in the country. Why should it not still further increase its range of usefulness by providing an adequate emergency service for that portion of the city where, in the judgment of those

competent to decide, such service is needed? It must, of course, always be borne in mind, that the hospitals already established provide an emergency service for large areas of the city in which they are located. An extension of this service, is, however, desirable, in the business portion, situated at a distance from the large hospitals and in a district where accidents are likely to occur. It appears that this has been the earnest wish of the Board of Trustees for many years. They have repeatedly petitioned those in authority for appropriations looking to a down-town relief station, to be under the direct control of the City Hospital. This has been persistently refused, and the city now finds itself, with the closing of the Emergency Hospital, which was a private institution, without facilities of any sort for the treatment of emergencies near the region at which accidents are likely to occur. This station must ultimately be supplied by city funds, if it is to be permanent — that seems self-evident. The advantages of having the whole system under one jurisdiction has recently been pointed out by Mr. Shuman, of the City Hospital Trustees, when he says that such a station should be under the management of the hospital department, in order that accident cases may have continued treatment under one method instead of being taken to one hospital for first treatment, and subsequently taken to another for continued treatment, thus subjecting patients to undue examinations, operations and dressings, and dividing the responsibility, and also lessening the chances of a perfect recovery.

In the third place, if such a station be established its limitations should be clearly recognized, and the idea of "emergency" and "accident" never for a moment lost sight of. This was embodied in a communication of a committee of the Visiting Medical Staff of the City Hospital in 1895. In this communication they said that they did not believe that such a station should be a hospital in the ordinary sense, but rather a station where a person suffering from accident, sudden sickness or other emergencies could receive immediate attention, and thence be transferred to the Boston City Hospital or other hospitals for further treatment, or to their homes. They said that they believed that such a station properly organized should have all the means and appliances for meeting readily any emergencies, large or small, that were liable to arise in the city of Boston, with the further implication that no other cases were to be treated. If such a limitation were adhered to it is evident that the number of beds could be reduced to a minimum, with an accompanying reduction of expense, and a most efficient service provided.

It is to be hoped that the efforts of the Trustees of the City Hospital may be at an early date successful, and that more definite action may soon be forthcoming leading to the establishment and maintenance of this much-needed adjunct of a well-organized medical charity.

THE YELLOW-FEVER QUESTION.

Controversy is, no doubt, one of the best aids to truth. The critical spirit which is born of disagreement tends to discover flaws in method or argument which a mere superficial acceptance of facts could evidently never accomplish. An instance of this effectual, if unpleasant, method of arriving at facts we have been observing for some time in the active discussion which has been going on between Professor Sanarelli, of Bologna, Italy, and Surgeon-General Sternberg and others, regarding the etiology of yellow fever. The details of the discussion are interesting, owing to their technical character, only to special students of bacteriological matters; the general results are, however, of the greatest significance and importance to us all.

Two papers have appeared in recent numbers of the *Medical News*, the first by Sanarelli, restating his position and conviction that his *bacillus icteroides* is the specific cause of yellow fever, and attacking with considerable energy Novy's recent work and also Sternberg's. The paper is controversial, and vigorously written, and whatever the ultimate merits of the question may be, states certain wholesome facts in perfectly definite fashion, ultimately replying to the critics in the following words:

"I (Sanarelli) am inclined to doubt if those who find it so easy to criticise are in a position to treat the bacteriological and pathogenetic questions of the infectious diseases with as much experience and authority, for these can only be acquired after many years of practical study at the bedside of the sick, in the autopsy-room and in the laboratory of comparative experimental pathology."

To this paper Sternberg replies in the succeeding number of the *Medical News*, defining his attitude toward the subject, and quoting from his recent publications. The paper is defensive throughout and closes with certain statements, some of which are as follows:

That some bacteriologists who claim to have found Sanarelli's bacillus have mistaken it for one of the varieties of the colon bacillus; that experiments made with Sanarelli's serum in high dilution give the Widal reaction with the bacillus of hog cholera; also, that serum from an animal immunized against hog cholera, in high dilutions, causes arrest of motion and typical agglomeration of Sanarelli's bacillus; also, that cultures of Sanarelli's bacillus fed to pigs cause the death of these animals, and that the typical lesions of hog cholera are found in their intestine; that blood serum of yellow-fever patients or of convalescents from this disease does not give a marked Widal reaction with Sanarelli's bacillus, although the blood of an animal immunized by the injection of cultures of this bacillus does give the specific reaction in high dilutions; that so far as I (Sternberg) am informed, the results obtained in the use of Sanarelli's antitoxic serum do not give support to his claim to have discovered the specific germ of yellow fever.

Finally, Sternberg writes:

"I would say it appears to me at the present time that, like the colon bacillus and bacillus *x*, the bacillus of Sanarelli is a pathogenic saprophyte which is present occasionally and accidentally in the blood and tissues of yellow-fever patients, and that its etiological relation to this disease has not been established."

In view of this very recent discussion and the forcible restatements of the two positions, it is of interest that the commission appointed by the Government to investigate Sanarelli's claims has handed in a report substantiating his conviction that the *bacillus icteroides* is the true cause of yellow fever. This commission, consisting of Surgeons Eugene Wasdin and H. D. Giddings, was appointed in November, 1897, and has since been prosecuting its investigation in the laboratory of the Marine-Hospital Service in Havana. The final report has just been published in the U. S. Public Health Reports, Vol. XIV, No. 33. The subjects of study were twenty-two cases of disease thought to be yellow fever by the native physicians in attendance, and in fourteen of which the commission concurred in the diagnosis. The conclusions derived from the investigation are:

"(1) That the micro-organism discovered by Prof. Giuseppe Sanarelli, of the University of Bologna, Italy, and by him named "bacillus icteroides," is the cause of yellow fever.

"(2) That yellow fever is naturally infectious to certain animals, the degree varying with the species; that in some rodents local infection is very quickly followed by blood infection; and that, while in dogs and rabbits there is no evidence of its subsequent invasion of the blood, monkeys react to the infection the same as man.

"(3) That infection takes place by way of the respiratory tract, the primary colonization in this tract giving rise to the earlier manifestations of the disease.

"(4) That in many cases of the disease, probably a majority, the primary infection or colonization in the lungs is followed by a "secondary infection" or a secondary colonization of this organism in the blood of the patient. This secondary infection may be complicated by the coinstantaneous passage of other organisms into the blood, or this complication may arise during the last hours of life.

"(5) That there is no evidence to support the theory advanced by Professor Sanarelli that this disease is primarily a septicemia, inasmuch as cases do occur in which the bacillus icteroides cannot be found in the blood or organs in which it might be deposited therefrom.

"(6) That there exists no causal relationship between the bacillus *x* of Sternberg and this highly infectious disease, and that the bacillus *x* is frequently found in the intestinal content of normal animals and of man, as well as in the urine and the bronchial secretion.

"(7) That, so far as your commission is aware, the bacillus icteroides has never been found in any body other than one infected with yellow fever, and that whatever may be the cultural similarities between this and other micro-organisms, it is characterized by a specificity which is distinctive.

"(8) That the bacillus icteroides is very susceptible to the influences injurious to bacterial life; and that its ready control by the processes of disinfection, chemical and mechanical, is assured.

"(9) That the bacillus icteroides produces *in vitro*, as well as *in vita*, a toxin of the most marked potency; and that, from our present knowledge, there exists a reasonable possibility of the ultimate production of an antiserum more potent than that of Professor Sanarelli."

It is a matter of regret that more cases were not available for this study. While careful work in a few cases is infinitely more profitable than uncritical work on many, nevertheless, the importance of the question demands painstaking work on many cases by many competent observers, an outcome which we have no doubt will soon be forthcoming.

MEDICAL NOTES.

MARRIAGE OF THE SUBJECTS OF VENEREAL DISEASE FORBIDDEN. — A law recently passed by the Michigan Legislature, according to the *Medical Record*, forbids the marriage of any person suffering from gonorrhea or syphilis, and provides that any one so diseased who may marry shall be guilty of a felony punishable by a fine of not less than $500 or more than $1,000, or imprisonment in the penitentiary for a term not exceeding five years, or by both fine and imprisonment. A wife or husband may testify against her or his guilty spouse, and the privilege of medical secrecy is also abrogated in such cases.

THE CAUSE OF NIGHT TERRORS. — In a recent paper in the *British Medical Journal* Dr. E. Graham Little sums up the results of his observations as follows: Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnea. A preponderating number of cases are found in rheumatic subjects with early heart disease. A considerable proportion of cases are due to obstruction of nasal cavities and fauces. Digestive disturbances do not play the important part in causation that is often assigned to them. The evidence for their causal connection with epilepsy or allied neuroses is scanty. The attacks occur in the subconscious stage of early sleep, and are confined to young children under puberty.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, August 30, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease:

diphtheria 40, scarlet fever 22, measles 5, typhoid fever 40, small pox 2.

New Buildings for the Massachusetts General Hospital. — Work has been begun on a new operating building for the Massachusetts General Hospital, which is to contain an amphitheatre, smaller operating- and dressing-rooms, etc., and is to be constructed in every detail for facilitating aseptic work The operating theatre will seat one hundred and seventy-one persons. The building will be constructed of Chelmsford granite and brick. Two other buildings which are to be added to the hospital equipment consist of a domestic building, and an addition to the present nurses' dormitory.

New Cases of Small-Pox. — It is reported that two new cases of small-pox have been discovered in the Roxbury District. Neither case is of a severe type; one, a man, is practically well, and the other, a child, has been sent to Gallop's Island, The source of contagion is obscure.

Deaths of Centenarians. — Mrs. Mary Russell Bradford, believed to be the oldest person in New England, died at her home in Cambridge, August 27th, at the age of one hundred and six years, two months, eighteen days. She was born in Boston June 9, 1793, the daughter of Isaac and Mary Russell Winslow. She early married Charles Bradford, and up to about twenty years ago she lived in Boston. A year ago she was in excellent health, but failed rapidly during the last winter and spring. Mrs. Lucy Williams, who was believed to be the oldest woman in Connecticut, died at Uncasville last week, aged one hundred and three years.

A Correction. — The *Philadelphia Medical Journal*, in a New England note of the current issue, makes the following erroneous statement regarding the West End Nursery. "An interesting summer feature of the West End Nursery work is the branch service at Rainsford Island in Boston Harbor, with which is connected a training school for nursery maids. The form of prophylactic work promoted by this school appeals at once to anxious mothers, and the graduates are in great demand." The summer hospital at Rainsford Island has been discontinued.

NEW YORK.

The New Building of the Woman's Hospital. — Plans have now been completed for the new building of the Woman's Hospital of the State of New York, which the managers at first thought of erecting on a site further up-town, but afterwards decided to place on the present grounds of the institution, occupying the block between Park and Lexington Avenues and 49th and 50th Streets. The proposed new building will cost $400,000, of which amount considerably more than $300,000 has already been raised. Russell Sage, who is one of the Board of Governors of the Hospital, led off with a subscription of $50,000, and a like sum was also contributed by Mrs. Frederick Thompson, the treasurer.

The New York Water Supply. — Controller Coler has won the approval of the best citizens by his efforts to defeat what is known as the Ramapo Water Company job. If it should be deemed advisable to supplement the water supply now furnished by the Croton water-shed by the supply contemplated by the Ramapo Company, which includes an area of water-shed in Ulster and Greene, as well as Rockland and Orange Counties, on the west bank of the Hudson, he is of the opinion that the city itself should acquire the land required, rather than contract with any private company for the water. Under the circumstances, therefore, he has requested a corps of the city's engineers to make an investigation of the capabilities of the region referred to, and at the next session of the Legislature he proposes to secure for the city of New York, if possible, the right to go into any part of the State and acquire land that is decreed necessary for water-shed purposes. With this right of eminent domain secured, Mr. Coler states that, by extending the present Croton water-shed system to Ten Mile River, the supply can be greatly increased, and 100,000,000 gallons a day be obtained, at an expenditure of about $10,000,000. In the meanwhile, if the waste now taking place, not only through negligence on the part of the people, but from leakage from defective water-mains, could be checked or even reduced, the supply now at command would be ample for all the needs of the city for a considerable number of years to come.

Precautions Against Plague. — In a response to a communication addressed to them by Health Officer Doty, the two companies owning lines of steamers plying between Portugal and New York have promised not to bring over any passengers as long as bubonic plague exists in Portugal. Dr. Doty has announced that all vessels arriving from localities known to be infected will be treated as infected vessels, and he expresses his ability to successfully handle the disease should any cases of it be brought to the port of New York. The experiments carried on some time ago at the quarantine station laboratory on Swinburne Island, with cultures of plague germs obtained from Bombay and published in 1897, showed that the organism could be effectually destroyed by means of steam and formaldehyde. The disinfection by steam was performed in a steam chest, especially prepared, in which a vacuum was produced. Superheated steam was introduced within this chamber, which contained the infected material, inclosed in various wrappers, such as newspapers, rugs, blankets and sheets. The temperature of 170 degrees Fahrenheit was found sufficient to kill the germ if it was enclosed in a sheet of paper and envelope, while 250 degrees of heat, with an exposure of fifteen minutes, was certain destruction to germs wrapped in blankets or newspapers. The experiments with formaldehyde were most exhaustive, and various methods of employing this agent were tried, until the most efficient was secured. Since the successful termination of these tests, Dr. Doty states, the methods thus arrived at have been employed at

quarantine upon all vessels coming from forts in the far East where bubonic plague has been reported or its presence suspected.

Miscellany.

THE TONIC PROPERTIES OF SEA AIR.

CONSIDERABLE speculation has from time to time been made as to what causes the invigorating and tonic properties of a sea-breeze. Ozone is very commonly accepted as at any rate an important factor in this connection, since it is invariably present in air that has been in contact with sea-water, and especially agitated sea-water, and to a smaller extent in the air of the country, but it rarely occurs in the air of towns and crowded places. Ozone, however — and with it probably traces of hydrogen peroxide — is undoubtely formed by air skimming over the surface of fresh water, and hence the breezes coming over the lochs in Scotland and large lakes and rivers in other places become ozonized and bracing. The Briton has an instinctive fondness for procuring his change or spending his holiday down by the water side, be it sea, lake, or river, probably because he finds, though he does not know exactly why, that the air of water-side places does him more good than the air of the country, where there are trees and beauties of landscape but no large tract of water. The freshness of the early morning air is due most probably to the formation of dew on the previous night, the transition from the vaporous to the liquid state causing ozonization of the air with which the condensed watery particles come into intimate contact. This freshness disappears as the day wears on because of the readiness with which ozone is destroyed by organized and organic substances. The exhilarating effect of a sea-breeze may, however, be ascribed to other bodies which are foreign to inland air. Thus sea air contains a traceable amount of salt and iodides, attaining a maximum of 0.022 gramme per litre or about one and a half grains per gallon. These mineral ingredients derived from the sea doubtless accentuate the tonic action of sea air, and, further, it is probable that ozone interacting with chlorides and iodides would lead to traces of chlorine and iodine being present. Many persons describe the smell of strong sea air as iodous or chlorous, and it has even been said that the starch used in face-powders turns blue at the seaside on account of the iodine in the air forming blue iodide of starch. If that be so, the blue and haggard appearance characteristic of many faces exposed to a strongly salt-impregnated breeze would find an interesting, but perhaps embarrassing, explanation. — *Lancet.*

STREET NOISES.

THE *Medical Press and Circular* takes the following hopeful view of the noise question as regards London. We have not yet reached the point of improvement in America, but we may certainly hope for better things if London's Society has succeeded so well in its endeavors:

"The life of the average citizen is becoming more tolerable, so far as street noises are concerned, a happy state of things which is due not to the fact that he has become accustomed to such nuisances, but because the streets are quieter than they used to be. In a certain measure a good influence has been exerted in this direction by the London Society for the Suppression of Street Noises. Although only in the second year of its existence, the Society, as its report for the past year shows, has been steadily pressing forward an admirable campaign against the soul-disturbing costermongers and newsboys, who make the thoroughfares hideous with their yells and howls. Moreover, it is satisfactory to note that the Society has a well-designed programme in the pursuit of which its members intend to expend their best energies. For example, among their objects of reform are included the compulsory fixing of India-rubber tires on all vehicles, floors of the same material for milk-carts, the establishment of kiosks in place of the screeching newspaper boys. But even if all these reforms were successfully attained, many more noises would still be left to be dealt with. The bawling coal hawker, for instance, is an intolerable nuisance, and the irritating, expressionless, metallic clang of the barrel-organ should be banished altogether from the streets. Possibly, however, when the London Government Act comes into force, marked improvement will be noticed in regard to the prevalence of street noises, inasmuch as the new municipalities have been empowered to make by-laws for regulating and suppressing such nuisances, and there is every reason for supposing that full advantage will be taken of the clauses in the Act relating thereto."

JAPANESE WRESTLERS.

ALTHOUGH the American is willing to concede to the Japanese the possession of a mental capacity almost if not quite equalling that of the majority of white races, he is apt to form a somewhat slighting opinion of him as viewed from a physical standpoint. The specimens met with in this country do not tend to convey a favorable impression of their athletic powers. After, however, reading an account of the physical measurements of some of the most prominent Japanese wrestlers, a more respectful attitude regarding the muscular development of these little men will probably be taken. The *Jiji Shimpo* has recently published a table giving the measurements of six of the foremost Japanese fighters. From this table it is gathered that the most bulky of these modern gladiators weighs at the age of twenty-two years about three hundred pounds; height, five and a half feet; girth of chest, fifty-eight inches; lung capacity, four thousand four hundred and fifty cubic centimetres; upper arm, eighteen inches. Another one weighs over two hundred and eighty pounds; height, six feet five inches; girth of chest, forty-eight inches; lung capacity, six thousand cubic centimetres; upper arm, sixteen inches. The smallest of these fighting men weighs more than two hundred pounds, measures in height five feet seven inches, while in lung capacity he exceeds them all. There are few wrestlers or pugilists in this or any country who attain to these dimensions, and those who have seen some of the best exponents of Japanese wrestling are willing to back them when pitted against the pick of the European or American experts, as it is said that they are as skilful as they are powerful. — *Medical Record.*

Correspondence.

EXCESSIVE CRYING OF INFANTS.

BOSTON, August 28, 1898.

MR. EDITOR: There is no doubt that for a child under three months of age to be allowed to cry continuously for a considerable period of time is very injurious and even dangerous. Umbilical and femoral hernias are often produced in this way, as has been frequently proved. An instance comes to my mind of a child, now eight years of age, who during the first month of her life was subjected to this "system" of baby training, with the result that she has had ever since a discharge from the navel which the best surgeons in Boston have failed to cure.

The brain, too, must suffer from the continued hyperemia to which it is subjected. Digestion is impaired. The effect upon the lungs of forcible inspiration and expiration is to throw an unusual and unnecessary strain upon the delicate cell tissues that may well cause emphysema and lay the foundation of serious lung troubles. The blood cannot be well aërated and consequently becomes impure.

The heart, too, just commencing its life-long task of pumping blood into the circulatory system is seriously handicapped by the excessive strain upon it. Eczema and other skin diseases are caused by the united action of impure blood — the product of imperfect digestion and imperfect aëration — and the irritating perspiration caused by the long-continued exertion of crying.

These and many other evils are caused by excessive crying. Yet, there is an impression abroad that crying does not hurt a child, and that it is good practice to leave the child alone to "cry it out." In hospitals, where a certain routine must be enforced, some crying is inevitable and unavoidable, but in private nursing this routine is neither necessary nor desirable. A baby should be fed at regular intervals, and between the feedings it should receive such care as to make it comfortable and happy. It should be an axiom with every nurse that a baby cannot be treated too tenderly. It has come to my attention frequently that the converse of this treatment is being followed by many nurses, and, more strange still, is being encouraged by some physicians. The grounds upon which this cruel method is justified I understand to be as follow:

First, the child, from its birth, must be trained to regular habits. It must be fed, washed and dressed by rule; in the intervals let severely alone. If it cries take no notice of it.

Second, it doesn't hurt the child to cry.

Third, the mother will have more time for social pleasures if the child is trained so that it never expects to be hushed to sleep in her arms or to feel her comforting touch in its baby troubles.

All the above reasons, and they are the most reasonable reasons I have heard, have their origin in selfishness. None of them are given from the standpoint of the baby. The new-born infant rightly claims loving care, not neglect. It craves warmth and the protection of loving arms. It cannot change its position, but it appreciates the changes that a sympathetic nurse, who *feels* the baby needs, contrives to give it. No one but a sensitive, sympathetic nurse should ever attend upon an infant. Do not misunderstand me. I am not in favor of too much handling of an infant, and I would encourage regularity in diet and habits, but the attitude of the nurse towards the child should be one of fostering care and not that of machine-like adherence to rigid rules. I have known nurses to allow a child to cry until exhausted without making any effort to soothe it. To the physician belongs the responsibility of the health of the child. To the physician the nurse must look for orders. He is her superior officer, and must always be obeyed.

The undersigned would like to hear from physicians in regard to this matter. Do they approve or disapprove of this practice?

SUSAN E. CROCKER, M.D.

METEOROLOGICAL RECORD

For the week ending August 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	29.83	78	87	69	82	73	78	S.W.	S.W.	11	7	O.	C.	
M..14	30.06	68	77	59	61	45	53	N.	N.	10	6	C.	C.	
T...15	30.20	62	70	55	60	64	62	N.E.	S.	10	9	F.	C.	
W..16	30.12	69	81	57	61	42	52	N.W.	S.W.	5	12	O.	C.	
T...17	30.16	70	82	58	53	56	54	N.W.	S.	6	11	O.	C.	
F...18	30.06	74	86	62	66	†4	75	W.	S.	4	10	O.	C.	
S...19	29.90	81	90	72	85	82	84	W.	S.W.	9	8	F.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 19, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1142	448	16.23	11.04	9 81	1.36	2.40
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,340,226	381	143	16.12	14.04	9.88	1.82	1.56
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	219	97	22.05	6.65	14.85	1.80	2.70
Baltimore	506,389	174	68	30.21	5.13	22.23	1.71	2.85
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	109	45	40.95	8.19	27.30	7.28	—
Washington	277,000	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	65	27	34.50	6.16	23.10	1.54	—
Nashville	87,754	45	8	37.28	4.66	34 95	2.22	—
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	43	17	—	—	—	—	—
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89,724	31	15	22.61	6.46	16.15	—	3.23
Lowell	88,641	42	18	26.18	7.14	21.42	2.38	—
Lynn	86,703	25	7	32.00	8.00	28.00	—	—
New Bedford	68,340	28	14	46.41	—	38.27	3.57	3.57
Somerville	68,101	24	7	25.00	29.12	20.80	—	—
Lawrence	57,263	29	17	34.50	14.76	31 05	—	—
Springfield	56,501	16	4	25.00	6.25	18.75	—	—
Holyoke	43,424	13	7	30.76	38.45	7.69	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	20	12	35.00	5.00	18.00	5.00	—
Malden	34,613	11	4	27.27	18.18	27.27	—	—
Chelsea	33,468	14	7	—	—	—	—	—
Haverhill	32,022	—	—	—	—	—	—	—
Gloucester	30,589	11	7	9 09	—	—	9.09	—
Newton	29,716	4	3	75.00	—	75.00	—	—
Fitchburg	29,438	11	5	27.27	27.27	27.27	—	—
Taunton	28,167	—	—	—	—	—	—	—
Everett	25,338	10	5	60.00	—	50.00	—	—
Quincy	25,549	7	4	42.84	14.28	42.84	—	—
Pittsfield	22,643	15	—	52.00	—	52.00	—	—
Waltham	22,296	5	1	20.00	—	20.00	—	—
North Adams	20,971	8	4	37.50	—	37.50	—	—
Chicopee	17,842	6	5	33.33	—	33.33	—	—
Medford	16,511	3	3	66.66	—	66.66	—	—
Newburyport	14,915	6	2	33.33	16.66	33.33	—	—
Melrose	14,032	2	1	—	—	—	—	—

Deaths reported 2,531; under five years of age 1,012; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 587, consumption 263, acute lung diseases 130, diarrheal diseases 394, typhoid fever 55, diphtheria and croup 50, whooping-cough 45, cerebro-spinal meningitis 15, scarlet fever 9, measles 9.

From whooping-cough New York 16, Philadelphia 8, Boston 5, Pittsburg and Providence 4 each, Cambridge, Lawrence and Everett 1 each. From cerebro-spinal meningitis New York 6, Baltimore 3, Philadelphia, Lynn and Somerville 1 each. From

scarlet fever Pittsburg 3, New York 2, Philadelphia, Baltimore, Worcester and Somerville 1 each. From measles New York 7, Philadelphia and Providence 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending August 12th, the death-rate was 24.3. Deaths reported 5,320; acute diseases of the respiratory organs (London) 163, diarrhœa 1,295, measles 127, diphtheria 71, whooping-cough 58, fever 24, scarlet fever 22, small-pox (Hull) 1.

The death-rates ranged from 13.6 in Huddersfield to 36.3 in Plymouth; Birmingham 27.0, Bradford 20.1, Cardiff 19.4, Gateshead 21.0, Hull 21.4, Leeds 21.3, Liverpool 33.6, London 23.7, Manchester 32.3, Nottingham 28.1, Sheffield 30.3, Sunderland 17.5, Swansea 17.6, West Ham 28.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 26, 1899.

C. H. GRAVATT, medical inspector, ordered to duty at the New York Navy Yard, as member of board of medical examiners, September 5th.

C. F. STOKES, passed assistant surgeon, detached from duty as member and recorder of board of medical examiners at the New York Navy Yard, September 5th, and ordered to continue on duty at the Naval Hospital, New York.

M. S. GUEST, passed assistant surgeon, ordered to the Boston Navy Yard.

S. ENGLANDER, pharmacist, detached from the Mare Island Navy Yard and ordered to the New York Navy Yard.

L. R. G. LEWIS, pharmacist, detached from the New York Navy Yard and ordered home and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING AUGUST 17, 1899.

IRWIN, FAIRFAX, surgeon. To proceed to Marseilles, France, and Lisbon and Oporto, Portugal, for special temporary duty. August 16, 1899.

WASDIN, EUGENE, surgeon. To report at Washington, D. C., for special temporary duty. August 14, 1899.

GEDDINGS, H. D., passed assistant surgeon. To proceed to New York, N. Y., for special temporary duty. August 16, 1899.

SMITH, A. C., passed assistant surgeon. To proceed to Hampton, Va., and report to Surgeon J. H. WHITE for special temporary duty. August 17, 1899.

STIMPSON, W. G., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. August 17, 1899.

RICHARDSON, T. F., assistant surgeon. Detailed as quarantine officer for the port of Neuvitas, Cuba. August 14, 1899.

SCHUG, F. J., acting assistant surgeon. Granted leave of absence for thirty days from August 15, 1899. August 17, 1899.

WOODS, C. H., hospital steward. Granted leave of absence for fifteen days from August 16, 1899. August 15, 1899.

RICHARDSON, S. W., hospital steward. To proceed to Birmingham, Ala., for special temporary duty. August 17, 1899.

PECK, F. H., hospital steward. To proceed to Hampton, Va., and report to Surgeon J. H. WHITE for special temporary duty. August 14, 1899.

PROMOTION.

THURSTON, E. J., hospital steward. To be hospital steward and chemist. August 17, 1899.

BOARD CONVENED.

Board convened to meet at the U. S. Marine Hospital, New York, N. Y., at 10 o'clock A. M., August 16, 1899, for the physical examination of a candidate for appointment in the Revenue Cutter Service. Detail for the Board: Surgeon GEORGE W. STONER, Chairman; Assistant Surgeon W. C. HOBDY; Assistant Surgeon W. C. BILLINGS, Recorder.

TREASURY DEPARTMENT, OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

WASHINGTON, D. C., August 25, 1899.

A board of officers will be convened at the Service Building, 378 Washington Street, New York City, Wednesday, October 4, 1899, for the purpose of examining candidates for admission to the grade of assistant surgeon in the U. S. Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) physical, (2) written, (3) oral, (4) clinical.

In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service, assistant surgeons are entitled to examinations for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen-hundred dollars, passed assistant surgeons two thousand dollars and surgeons twenty-five hundred dollars a year. When quarters are not provided commutation at the rate of thirty, forty or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information, or for invitation to appear before the Board of Examiners, address

SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

APPOINTMENTS.

The following appointments have been made at the Tufts College Medical School: HAROLD WILLIAMS, M.D., professor of the principles and practice of medicine; HENRY B. CHANDLER, M.D., professor of ophthalmology; HORACE D. ARNOLD, M.D., assistant professor of clinical medicine; ALBERT P. MATHEWS, S.B., Ph.D., assistant professor of physiology.

SOCIETY NOTICE.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. – The twenty-fifth annual meeting of the Association will be held in Chicago, October 3-6, 1899. The officers of the Association are: President, Duncan Eve, Nashville; Secretary, Henry E. Tuley, Louisville.

RECENT DEATH.

SAMUEL B. WYLIE MCLEOD, M.D., died at his residence in New York on August 23d, of cardiac disease. He was born in 1831 in New York City, where his father, the Rev. John Neil McLeod, was pastor of the Twelfth Street Presbyterian Reformed Church for forty-four years. He was graduated from the University of Pennsylvania in the class of 1849, and from the College of Physicians and Surgeons, New York, in 1852. He continued his studies for a time in Paris and then served for two years as surgeon in the United States Navy. He then settled in New York, where he secured a large practice and took a prominent part in all the affairs of the medical profession of the city. He was especially interested in society work and was successively vice-president and president of the Medico-legal Society, the New York State Medical Association and the New York County Medical Association. Of the two latter societies he was one of the founders and he was elected president of the County Association for five terms in succession. He was also one of the founders and temporary president of the Medical Association of the Greater City of New York. At the time of his death Dr. McLeod was consulting physician to the Marion Street Lying-in Hospital, and trustee and consulting physician of the Northern Dispensary. He is survived by a widow and two sons, Lincoln McLeod, who was a captain in the 71st Regiment, New York Volunteers, in the Spanish War, and Dr. Johnston McLeod, a practising physician in Aurora, N. Y.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Organic Materia Medica, being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the use of Students, Druggists, Pharmacists and Physicians. By John M. Maisch, Ph.M., Phar.D., late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Seventh edition. Revised by Henry C. C. Maisch, Ph.G., Ph.D., Professor of Materia Medica and Botany in the Medico-Chirurgical College of Philadelphia, Department of Pharmacy. With 285 illustrations. Philadelphia and New York: Lea Brothers & Co. 1899.

Original Articles.

THE EFFECTS OF TRAINING.

A STUDY OF THE HARVARD UNIVERSITY CREWS.

BY EUGENE A. DARLING, M.D., CAMBRIDGE.

(Concluded from No. 9, p. 209.)

Circulatory system. — Periodic examinations of the heart and pulse were made, special attention being given to the size of the heart, to the occurrence of abnormal sounds and to the rate and character of the pulse. Examinations were also made after several time-rows and both races.

Inspection of precordia, etc. — All of the men showed a prominence of the precordial region and a more diffuse pulsation than normal. The apex beat when visible was usually located in the fifth intercostal space, just inside the mammillary line. After the time-rows and races the apex beat was visibly displaced to the left, and in many instances a marked precordial and epigastric pulsation was noted. There was also in most cases visible pulsation in the peripheral arteries, most marked in the subclavians and carotids. The color was uniformly good, there being no instances of noticeable pallor or cyanosis, in spite of considerable disturbance of the heart's action in some cases.

Size of heart. — The routine examinations were all made in the middle of the afternoon, before rowing, so that the hearts might have recovered as far as possible from the rowing of the day before, and might be taken at their minimum size. Further examinations were made after the time-row of June 21st and after the races. The method pursued was as follows. The heart sounds were first examined and the apex beat located with the man standing. The man then lay flat and the apex beat was again located by sight and auscultation. Then, by combined auscultation and percussion, using the phonendoscope, the right, left and upper borders were found and outlined. The method is open to objection, as already stated, but seemed to be the most accurate under the circumstances, and by considering averages it was hoped that individual errors might, to a certain extent, be eliminated. The outlines were transferred to tracing cloth, the position of the nipples marked and the chart then made was kept for comparison. In measuring variations it was found that two fixed lines were necessary, one connecting the nipples — the intermammillary line — and the other bisecting the first at right angles — the median line of the chest. The ordinary terms employed clinically giving the position of the borders in relation to the sternum, ribs, or nipples are so variable in different individuals that no mean can be determined. The position of the apex beat was measured both from the median line and the intermammillary line; the right and left borders were measured from the median line, the former at the level of the nipples, the latter at the apex. The upper border was measured from a line drawn through the apex parallel to the intermammillary line. By averaging these various measurements it was easy to construct a chart representing the average heart of the squad and also to estimate the average variation.

The following Table (VI) and Chart (VI) give the measurements and variations of the average heart of the entire squad. They show that there was a progressive enlargement affecting both sides of the heart during May and reaching its maximum early in June. After this there was a considerable shrinkage, especially of the left side, both the left border and the apex beat receding towards the median line until their positions were not very different from those of early May. The right side of the heart also showed shrinkage but to a less degree than the left. The position of the upper border varied considerably in the different examinations, depending apparently partly on the fulness of the stomach and partly on the depth of respiration. The relative rise and fall of the apex beat could not be followed as closely as its lateral movement, owing to the ribs.

The period of greatest enlargement corresponded to the period of the most arduous work, late in May and early in June, when the final selection of men was being made, and when consequently every man

TABLE VI. Average Heart Measurements of Squad.

Dates of examinations.	Men examined.	Apex beat.		Right border, cm.	Left border, cm.	Total breadth, cm.	Upper border.	
		From median line, cm.	From intermam. line, cm.				At middle point, cm.	At quarter point, cm.
May 9-17 . . .	11	8.5	4.5	3.9	12 0	15.9	5.6	3.9
May 18-26 . . .	11	9.0	4.4	5.1	12.8	17.9	6.6	4.4
June 2-8 . . .	12	9.7	4.9	6.0	13.2	19.2	6.0	3.8
June 17. . . .	12	9.9	5.3	5.7	12.9	18.6	5.0	3.2
June 29 before race.	12	9.5	5.0	5.8	12.3	18.1	5.5	3.8

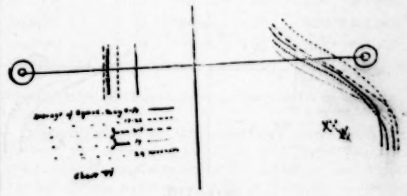


CHART VI.

was pulling his hardest. Probably the individual strain was greater at this time because the crew had not yet learned to pull as a unit. Then too, as already mentioned, the weather was very unfavorable, and the effort required to do the work was considerably greater than was needed later. The better weather conditions prevailing at New London, the more uniform rowing as the form of the crew was perfected and the more accurate adaptation of each man's rigging to his peculiarities, all tended to lessen the strain on the individual oarsman and by enabling him to do his work with less muscular effort proportionately diminished the labor demanded of the heart.

How much of the enlargement was due to hypertrophy and how much to dilatation is difficult to say. Probably there were both hypertrophy and dilatation. The accompanying change in the heart sounds in certain cases to be descr bed later would indicate that there was considerable dilatation at first, but that sub-

sequently the hearts gradually recovered tone and a true compensatory hypertrophy took place.

During the races, both four-mile and two-mile, a considerable dilatation took place, as shown in Charts (VII) and (VIII). The average increase in breadth of the cardiac dulness was nearly the same in the two crews — 1.4 centimetres for the eight and 1.5 centimetres for the four. The marked rise of the upper border relative to the intermammillary line may be attributed to the fact that the examinations after the race were unavoidably delayed until after dinner, and consequently allowance must be made for the full stomach.

Heart sounds. — The twelve men in the squad may be divided into three groups according to the effect of the training and races on their heart sounds and action.

In Group I, numbering five men, may be placed those whose hearts developed no markedly abnormal condition. The pulse rate at rest varied from 60 to 80, and after the time-rows and races, rose to 120 or thereabouts. The sounds remained normal, except that the first sound became somewhat louder

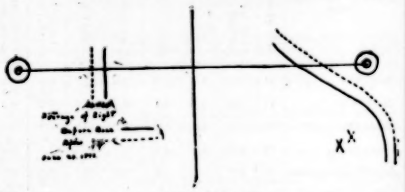


CHART VII.



CHART VIII.

and rougher than normal. Both the first and second sounds were occasionally reduplicated.

In Group II, including two men, the routine examination showed nothing abnormal, but after the time-rows and race both developed a faint blowing systolic murmur, loudest at the left margin of the sternum in the second and third intercostal spaces, but also audible at the apex. As in Group I, there was some tendency to reduplication of the sounds, but the rhythm remained normal.

In Group III may be placed the remaining five men, whose hearts showed abnormalities of sound or action at several different examinations, both before and after unusual effort. The most extreme case deserves a detailed description. This man had had rheumatism and typhoid and had been informed several years before that his heart was weak.

Following are the notes as taken:

May 10th. Pulse 96; irregular. Diffuse precordial and epigastric pulsation; pulmonic second sound accentuated; blowing systolic murmur audible over entire cardiac area, loudest in pulmonic area and at apex.

May 18th. Pulse 84; irregular; heart sounds as above but murmur inaudible at apex.

May 25th, after time-row of 3¾ miles. Pulse 138; very irregular; two sounds of equal intensity at apex; rhythm embryonic; murmurs very loud over entire precordia.

May 30th, before time-row. Pulse 84, somewhat irregular; murmur faint. After time-row of 3¾ miles. Pulse, 128; fairly regular; murmur much fainter than after previous time-row.

June 7th. Pulse 88; sounds as before time-row of May 30th.

June 17th. Pulse 78; regular; murmur very faint.

June 21st. Pulse 82; regular; no murmur. Two hours and a half after four-mile time-row. Pulse 98; regular; no murmur.

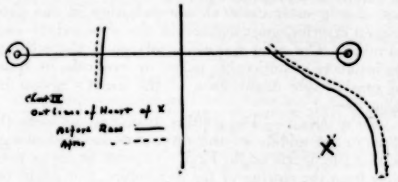


CHART IX.

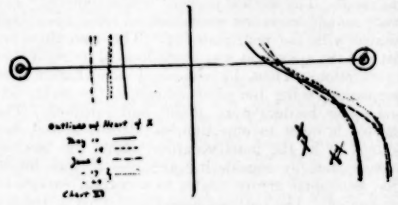


CHART X.

June 29th, before race. Pulse 84; regular; no murmur. Three hours after race. Pulse 88; murmur audible but very faint. General condition excellent.

The changes in the size of this heart corresponding to the changes in sounds and action are shown in Chart X, while the comparatively slight increase during the race itself is brought out in Chart IX.

The gradual improvement in this heart was one of the most instructive points in the entire investigation. After the time-row of May 25th it was in bad shape. The irregularity, accentuated pulmonic second sound, embryonic rhythm and rapid action, together with the enlargement, which was well marked, all pointed to an acute dilatation. During June the establishment of a compensatory hypertrophy was indicated by the return to normal rhythm and rate, the practical disappearance of the murmur and the stationary size. With all the disturbance shown by examination of this man's heart, there was nothing in his appearance

or capacity for work which would have called attention to his heart. If he had been advised to stop rowing when his heart was first examined the best demonstration of the beneficial effects of training would have been missed and the crew would have lost a very valuable man.

The four other hearts in this group showed much the same conditions, though in a less degree. All finished the race in good condition and without any more exhaustion than their companions.

Pulse. — The character and rate of the pulse have already been mentioned in several instances, and it is only necessary to add that it was invariably of high tension after unusual effort. This was no confirmation of Williams and Arnold's observation of diminished tension in the Marathon runners. It is possible that the exhaustion of the latter was extreme, and their hearts may have been much more affected than was the case with the crews. It is to be regretted that circumstances forbade the taking of sphygmographic tracings.

The cause of the murmur in acutely dilated hearts is ably discussed by Williams and Arnold; no evidence was secured in this study opposed to their conclusion that the bruits are of mitral origin and are due partly to a relaxation of the circular muscular fibres surrounding the orifice and partly to fatigue of the papillary muscles which control the movements of the valve-cusps.

The chief deduction to be made from this study of the hearts is that the heart is a muscular organ and that it shows with the other muscles both the fatigue due to violent and prolonged exertion and also the increase in size and power due to proper exercise and nutrition. The fatigue results in dilatation, the increased power in hypertrophy, and one of the main objects of training is the establishment of this hypertrophy. The physiological capabilities of the heart are enormous, and in judging of the effect of any undue exertion on it we must not regard the murmurs and irregularity alone, but must also consider carefully the way in which the heart is doing its work, its strength, as shown by its ability to maintain a proper arterial tension, and its recuperative power. As with other muscles, not size but quality tells in the long run.

Kidneys. — Periodic examinations of the urine were made coincidently with the heart examination. An attempt was made to estimate the twenty-four-hour amount, specific gravity, urea percentage and total urea, to test for albumin and sugar and to examine the sediment microscopically. The figures given below, as far as they refer to the twenty-four-hour amount and calculations based thereon, are probably considerably less than they should be. Even with the best intentions, slips of memory were liable to occur, and the full amount of urine passed was not always saved. Perhaps ten to twenty per cent. should be added to the urea excretion for this reason.

The urea was estimated by Squibb's ureometer. For albumin both the nitric-acid and heat tests were employed, and in case of doubt the picric-acid test was resorted to. When an appreciable amount was found, Esbach's albuminometer tube was used. The sugar test used was Fehling's.

The main facts ascertained are summarized in Table VII, subject to correction as noted above. These figures denote a moderate increase in the urea secretion above the normal and by implication a moderate increase in nitrogenous metabolism, but by no means as great an increase as one would expect if all the proteids eaten were absorbed and utilized. Physiologists have proved that an increase in the urea elimination above normal limits is usually caused by an increase in proteid digestion and not by an increase of muscular action.

Sugar. — The tests for glucose were invariably negative.

Albumin. — An unexpected fact brought out in the routine examination was the presence of traces of albumin in the urine of a large proportion of the squad under ordinary conditions of training. The twenty-four-hour amounts were examined six times, the tests being made intentionally only after a lapse of several days after the time-rows, to eliminate their effects as far as possible. In 83 specimens examined albuminuria was present 48 times. The amount of albumin was never more than a trace.

Sediments. — The albuminuria was, with but few exceptions, always accompanied by renal casts and epithelium and occasionally by a considerable excess of leucocytes. In several instances a few casts were found in urines which gave negative albumin tests. In the few cases of albuminuria without casts partial decomposition had taken place before the microscopic examination, so that casts may have been present but obscured.

Table VII. Average Urine Tests.

Date.	No. exam.	24-hour amount.	Specific gravity.	Urea, %	Total urea.
May 9-17 . . .	11	1181 c. c.	1.028	3.42,	39 5 gms.
May 18-26 . . .	11	1396 c. c.	1.027	2.68	36.9 gms.
June 2-8 . . .	12	1028 c. c.	1.027	2.76	27.3 gms.
June 18	12	1403 c. c.	1.022	2.53	34.2 gms.
June 20	12	1374 c. c.	1.024	2.66	36.3 gms.

Albuminuria after time-rows and races. — After three of the time-rows and after both races the first urine passed was examined for albumin and casts. The specimens were all small in quantity — one to three ounces — highly concentrated, and invariably contained considerable amounts of albumin, as shown in Table VIII. The largest percentage observed (0.9 per cent., Esbach) was in the urine of one of the four-oared crew after the two-mile race. The sediments contained correspondingly large numbers of hyaline and finely granular casts, many having renal cells and red blood corpuscles adherent. In many of the sediments there was also a considerable number of red blood corpuscles and an excess of leucocytes. The sediment in many cases was exactly that of the first stage of acute nephritis, and if examined without a knowledge of the conditions might easily have caused anxiety.

To find out how long the albuminuria and casts continued after the time-row of May 30th single specimens were examined the following day before the afternoon row, with the result that of 14 samples two contained a trace and one had 0.025 per cent. It is regretted that tests were not made after the rowing on ordinary days, since it is probable that even this may have caused an appreciable albuminuria and that

the traces found in the twenty-four-hour specimens really represented a considerable amount of albumin passed in one urination after rowing, diluted with non-albuminous urine passed during the rest of the day.

The renal conditions may be interpreted as an active hyperemia, becoming intense during the time-rows and races, and dependent in all probability on the increased arterial tension. Whether the hyperemia ever leads to permanent changes in the kidneys is a matter for future investigation.

The blood. — Numerous estimates of the specific gravity of the blood were made by Hammerschlag's method, with the intention of making blood counts and hemoglobin tests should any variation from the normal be observed. The method, however, was found to be tedious and unreliable, the results varying according to the temperature. In several instances when the specific gravity was low — 1.050 or thereabouts — a blood count and hemoglobin test gave normal figures. The examinations made yielded no information of importance and were therefore discontinued.

The digestive system. — One of the most troublesome features in training of all kinds is the care of the digestive organs. Many a race has been lost because of weak stomachs and because of prostration due to diarrhea. The crew squad this year offered no exception to this common tendency, for there were several cases of temporary attacks of indigestion and diarrhea. These troubles ought not to be attributed to the training but to improper diet and methods of eating. The food provided was all that could be desired in quality and in preparation. The chief criticisms suggested were in regard to the selection of food by the men themselves and to their common habit of eating too much and too fast — faults not confined to crewmen but nevertheless unwise. The one aim of many of the men seemed to be to consume as much meat as they could get and in the shortest possible time. The amount of roast beef devoured at a single meal was astonishing, a man often disposing of five or six large slices.

It has already been pointed out in discussing variations in weight that the energy set free in muscular exercise is derived largely from the combustion of fat and carbohydrate material, while the proteid metabolism is directed chiefly to repairing waste. To use a rough illustration, if we regard the body as a machine, the proteid elements of the food go largely to replace the wear and tear of the machine itself, while the carbohydrates and fats furnish the fuel whose combustion liberates heat and energy and thus enables the machine to do work. Of course the body is not a machine and this comparison is not true except in a general way. During training the wear and tear of the body generally is much increased, and the proteid elements of the food must be increased accordingly, but it is an error to increase them so enormously as is frequently the case. The slight increase in the urea excretion indicates that much of the proteid material must pass through the digestive tract unassimilated. This throws a great deal of extra work upon the digestive organs, work which does no good to the body, but may, and undoubtedly often does, do harm in causing indigestion and diarrhea.

The subject is deserving of study based on analyses of the food and of the excretions. A more accurate adjustment of food to needs and more time spent in mastication would unquestionably prevent that sensitiveness of the digestive organs which is one of the bugbears of the trainer.

III. OVER-TRAINING.

It was hoped that during this investigation data might be obtained bearing on the subject of over-training, but unfortunately (or fortunately, according to the point of view) there were no typical cases to study. The common symptoms are well known. They are, in brief, a loss of strength and endurance, so that a man previously strong becomes incapable of prolonged effort. This may be accompanied by a general nervous restlessness, by listlessness, by a loss of weight, by insomnia and by various digestive disturbances, such as anorexia and diarrhea. These symptoms should not be confounded with the temporary collapse which is occasionally seen after a severe exertion and which is more apt to be due to under-training than to over-training. The real condition at the bottom of over-training is still obscure, but in the light of this inquiry certain possibilities are suggested as factors which may have to do with its causation.

The first and most obvious one is the condition of the heart. We have seen that a great increase in size and strength is demanded of this organ and it may easily happen that it is called upon for more work than it is able to do and that instead of establishing a compensatory hypertrophy it becomes dilated and weakened. A "broken-winded" athlete is probably one with a dilated, flabby heart.

The second possible factor is the condition of nutrition. This is more difficult of demonstration than the first. As already pointed out, the nutrition may be disturbed in two ways, either by an improper diet, in which the nutritive elements are not apportioned to the needs of the body, or by disturbed digestion, as a result of which the food taken into the body is not utilized. That both of these contingencies may occur has been sufficiently demonstrated.

TABLE VIII. Albuminuria after Time-rows and Races. Figures Represent Percentages by Esbach's Albuminometer.

		Varsity Eight.								Varsity Four.				Substitutes.				
Date.	Occasion.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
May 25	Time-row.	Trace	....	0.12½	0.12½	0.12½	0.12½	Trace	0.25	0.25	0.25	0.12½	0.25	0.12½	....	Trace	0.12½	Trace
May 30	Time-row.	0.08	....	0.38	0.05	0.12½	0.10	0.05	0.15	0.05	0.15	0.05	0.05	0.05	0.10	Trace	0.05	0.05
June 21	Time-row.	Trace	Trace	0.25	Trace	0.05	0.07½	0.07½	0.07½	....	....	....	....	....	....	....	....	....
June 29	Races.	....	0.07½	0.25	0.10	0.05	Trace	0.20	0.05	0.90	0.15	0.10	0.07½	....	....	....	....	....

The third factor may be simple overwork. This is not so likely as the two preceding, for, when properly nourished, the capacity for work on the part of healthy young men is certainly much greater than that demanded in training. The peculiarity of training work, however, is its concentration. It may be that the excessive work accomplished in a brief space of time exhausts the muscles so that they do not recuperate before being called upon for a repetition of the work — that there is, so to speak, an accumulation of fatigue, and that this constitutes over-training.

The fourth factor which suggests itself is a nervous one, and this, while more intangible than the others, is unquestionably an important one. In the present state of our knowledge it can only be surmised, not proved. It is well known that there is a nervous fatigue entirely distinct from muscular fatigue and resulting from prolonged anxiety, from monotony of work and from numerous other causes. It may be that anxiety about a coming contest, together with the prolonged mental strain of mastering the technicalities of such a difficult art as rowing or such a complicated game as football, may lead to a condition of nervous exhaustion, and that this nervous exhaustion contributes to over-training.

No one of these factors will account for all cases of over-training and probably more than one cause must be admitted. At any rate it is safe to suggest certain points which should be borne in mind in laying out any course of training. They are, (1) not to throw too much work upon the muscles and especially upon the heart, until they are strengthened by preliminary work; (2) to watch the nutrition carefully, and (3) to avoid nervous fatigue by providing a certain variety of exercise, and by not confining the attention too closely to the approaching contest.

Finally, this investigation has demonstrated that the physiological effects of training, on the heart and kidneys in particular, may approach unpleasantly near to pathological conditions, and that there should be some competent supervision to insure that the safe limits, when those are determined, shall not be passed.

TWO CASES OF INJURY OF THE CORD RESULTING FROM FRACTURE OF THE SPINE.[1]

BY JOHN JENKS THOMAS, A.M., M.D., BOSTON,
Assistant in Nervous Diseases, Boston City Hospital; Assistant Neurologist, Children's Hospital, etc.

The literature of fracture of the spine within the last few years has reached an enormous volume, and a number of important monographs upon the subject has been published, such as that of Wagner and Stolper, and that of Kocher. Yet it is surprising to find in how few cases careful pathological examinations of the cord have been made. This was done in very few of Bastian's cases, and the same is true of those of Thorburn. In Germany more of this work has been done by Bruns and others. In this country the earliest cases I have found, where a careful microscopical examination was made, are those of Herter, while in Boston the first case was that reported by Dr. Courtney and myself in the Ninth Series of the Medical and Surgical Reports of the Boston City Hospital. In view of these facts I have thought that these additional cases would not be without value. The two cases reported in this paper were both of injury of the cervical region of the cord, and were admitted to the Boston City Hospital, one under the care of Dr. Monks, and the other under the care of Dr. Munro, to whose courtesy I am indebted for the clinical notes of the two cases.

[1] From the Pathological Laboratory of the Boston City Hospital. — Read before the Boston Society for Medical Improvement, May 8, 1899.

Case I. The first patient was a man thirty-seven years of age, who entered the hospital September 24, 1898. He had been found at the foot of a flight of stairs, and the record states that he had probably fallen three stories. He was semi-conscious at entrance and could be roused. On examination it was found that the patient could turn the head from side to side. There was an indefinite swelling of the neck, with marked tenderness and pain on motion. There was a lacerated wound over the outer side of the right patella, which connected with the joint. Motion was lost in the lower limbs, and sensation was absent over the limbs and trunk, except over the upper part of the chest. The pupils were equal and reacted to light. The superficial and tendon reflexes were absent. The breathing was with the diaphragm, and on the night of the 25th and 26th there was present Cheyne-Stokes respiration. It was noted on the 26th that he could move the left arm a very little, and on the 28th it was added that sensation was normal over the face, neck, and on the outer side of the arms down to the elbows. The patient had to be catheterized, and at first the bowels moved only after the use of enemata, but on the 30th incontinence of feces was noted. The temperature rose on the 25th, and on the 30th it was 104° F. On October 2d the patient became unconscious, and died upon that day.

The autopsy was made by Dr. Mallory on October 3d, eighteen hours after death. The spinal canal only was allowed to be opened. The body was that of a large, well-built and muscular man. On cutting away the subcutaneous tissue around the upper dorsal and cervical vertebræ there was found only the slightest trace of hemorrhage. This was present around the atlas, and also in the close vicinity of the lower cervical vertebræ, and of one or two of the upper dorsal vertebræ. There was a comminuted fracture of the fourth, fifth and sixth cervical vertebræ. The fracture involved the spinous processes, and the laminæ on both sides. On carefully removing the posterior portions of the cervical and the upper dorsal vertebræ it was found that the dura was attached by easily broken adhesions to the lower cervical vertebræ. The dura was tense, and swollen in the cervical portion. On opening it longitudinally there was found in the centre of the cervical enlargement an area three centimetres in length, which was soft and of a slightly yellowish color. The substance of the spinal cord was to a slight extent diffluent. The dura above and below the enlargement contained quite a little clear serous fluid. The cervical enlargement extended two centimetres above and two centimetres below the area of softening, and so far as could be made out externally, was practically normal, except possibly for a little swelling. The bodies of the fourth and fifth cervical vertebræ projected upwards into the spinal canal. The bodies were split longitudinally, as was also the body of the sixth cervical vertebra. The bodies of the fourth and fifth cervical vertebræ seemed to have other fractures in other directions, but they could not be distinctly made out.

Anatomical diagnosis. — Comminuted fractures of the spinous processes, laminæ and bodies of the fourth, fifth and sixth cervical vertebræ; laceration of the cord opposite the fourth and fifth cervical vertebræ with acute softening.

After hardening in formalin, section of the cord through the softened area at the middle of the cervical enlargement showed no sign of the normal structures of the cord. This condition extended for nearly one centimetre above and below the first section. A section 1.5 centimetres above the first one showed a large oval area, darker in color than normal, occupying the position of the left posterior horn, and the left posterior column, and extending well forward into the base of the left anterior horn. About two centimetres below the first section there was a similar dark area, smaller than that just spoken of, which occupied the base of the right anterior horn. About 1.5 centimetres lower, at the lower part of the cervical enlargement this dark area was larger, and still in the right side, but more in the posterior horn, and a similar smaller area was seen in the root of the left posterior horn. Half a centimetre lower the cord on section appeared normal to the naked eye.

Microscopical examination. — Sections were made at various levels and stained with hematoxylin and eosin; hematoxylin and Van Gieson's picric-acid and acid-fuchsin stain; by Weigert's myelin-sheath stain; Pal's modification of this followed by picric acid and acid fuchsin; and by Marchi's method.

At the point of greatest softening, at the level of the fourth cervical segment, it is almost impossible to make out any of the normal structures of the cord. At the periphery there can be seen a few nerve fibres with normal appearing nerve sheaths, but most of the fibres are swollen, and those that are cut transversly are mixed with others cut in all directions, and evidently broken and disorganized. Here and there throughout the section are areas of hemorrhage, composed of masses of red blood corpuscles with a moderate number of leucocytes. These corpuscles do not stain distinctly and are plainly undergoing degeneration. Here and there a blood-vessel is seen, often surrounded by a collection of leucocytes with irregular vesicular nuclei, and by small round cells. Occasionally at the periphery of the cord a connective-tissue septum, or connective tissue about a blood-vessel can be traced for a short distance into the substance of the cord. The greater part of the cord is represented by a confused mass in which are very numerous large and small phagocytic cells, apparently endothelial or connective-tissue cells. These cells for the most part have single rather small vesicular nuclei, eccentrically placed at the periphery of the cell. Occasionally cells are seen with two, three, or even more nuclei, or with a horseshoe-shaped nucleus; the protoplasm appears coarsely granular, and frequently contains fragments of red blood corpuscles or whole corpuscles. Sections stained by Marchi's and by Weigert's methods show that these cells have taken up large amounts of fat, and also myelin. At this level of the cord no nerve cells can be recognized. The sections stained by Marchi's method show a large amount of degenerated myelin throughout the section, aside from that taken up by the phagocytic cells spoken of above. These masses of fat vary greatly in size, some small, others large, and round or irregular in shape, and occasionally rings of various sizes are seen, representing degenerated and swollen nerve sheaths. Both the anterior and posterior nerve roots show the presence of a large amount of fat, fully two-thirds of the fibres being affected. Both the myelin sheaths and the axis cylinders show the presence of fat.

Sections one and a half centimetres above the point of greatest destruction show that the dark area in the left posterior horn consists chiefly of red blood corpuscles, which stain poorly and are evidently necrotic. There is a large amount of brownish blood pigment lying free throughout this area. There are numerous larger and smaller phagocytic cells, similar to those spoken of above, many of which contain blood pigment and red blood corpuscles. Very rarely a leucocyte can be seen. Here and there are large, round homogeneous masses, staining faintly with hematoxylin, apparently greatly swollen axis cylinders. There are quite numerous, rather large, round or oval empty spaces throughout much of this area, apparently formerly occupied by swollen nerve fibres. This area of hemorrhage is fairly sharply bounded, and occupies nearly the whole of the left posterior horn and the left half of the posterior columns, extending nearly to the periphery of the cord, and almost to the central canal anteriorly. Here and there in this area are seen small blood-vessels, with normal walls, without infiltration about them, but these are the only normal structures that can be made out. Sections from this level stained by Weigert's and Marchi's methods show that the phagocytic cells have taken up a considerable amount of myelin and fat, and that there are numerous large, fatty masses and rings, and swollen myelin sheaths scattered irregularly throughout this area. The other portions of the cord at this level appear fairly normal, except that scattered throughout the white substance of the cord, more especially at the periphery, there are to be seen swollen faintly staining nerve fibres, and portions of the periphery of the cord appear edematous. There are also at various places, more especially in the gray matter, enormously dilated blood-vessels to be seen. The sections stained by Marchi's method show a moderate degeneration of nerve sheaths and fibres throughout the cord, not more marked in one area than in another, except that it is perhaps slightly more marked near the periphery of the cord. There is a quite extensive degeneration of both anterior and posterior nerve roots, though less extensive than in the sections made at the point of greatest injury to the cord.

Sections from a level one and a half centimetres below the area of greatest injury, from about the region of the eighth cervical segment, show a similar area of hemorrhage, but somewhat smaller, in the right posterior horn, extending well forward to its base, and somewhat into the right posterior column. Here, too, there are some greatly dilated blood-vessels in other regions of the cord, chiefly near the central canal, and a diffuse degeneration of the nerve fibres of the white substance of the cord, and of the anterior and posterior nerve roots, as shown by Marchi's method.

Sections from the mid-dorsal region and the lower dorsal region show nothing abnormal except a slight degeneration of nerve fibres, about equal in all parts of the white substance of the cord, and a slight degeneration of the anterior and posterior nerve roots. There are no hemorrhages into the pia.

Summary. — We find in this cord at the mid-cervical region, extending over the fourth, fifth and sixth cervical segments, a very extensive destruction of all parts of the cord, partly from hemorrhage into the substance of the cord, and partly due in all probability to a direct crushing of the cord, resulting in breaking down of the nervous structures, a condition sometimes called myelomalacia. Although at the periphery some apparently normal fibres are seen, it is doubtful whether these were capable of functionating, and we probably had in this case a lesion which produced the symptoms of a total transverse lesion of the cord. The presence of phagocytic cells shows that the process of absorption of the destroyed tissues had begun. Above and below this area for quite a distance, there was extensive hemorrhage into the gray matter of the cord, chiefly in the posterior horns, though the white substance of the posterior columns was seriously affected. That is, we have, in addition, a traumatic hematomyelia. Other levels of the cord showed a diffuse degeneration of nerve sheaths and axis cylinders to about an equal extent in both ascending and descending tracts both above and below the crushed portion, and also degeneration of both anterior and posterior nerve roots. No degeneration of tracts of the cord was shown by Weigert's and Pal's stains, probably because a sufficient interval of time for their development had not elapsed. There were no hemorrhages in the pia.

Case II. The second patient was a man who entered the Boston City Hospital on October 31, 1898. The record simply states that he had fallen down stairs. Upon examination there was found a slight abrasion of the left side of the head and face, but no signs of fracture of the skull. The pupils were equal, of normal size, and reacted to light. The examination of the spine showed nothing except marked tenderness over the spinous processes of the third, fourth and fifth cervical vertebræ. There was paralysis of the arms and legs, with slight involuntary movements of both arms and of the right leg. It is stated that the left leg showed muscular spasm. There was complete loss of sensation in the body below the fifth rib, as well as in both forearms, and much diminished sensation in the arms and shoulders. The knee-jerks were much diminished. The cremasteric reflexes were present. The pulse was 70, and of good strength and volume. The temperature was 97.8.° The examination of the urine showed nothing abnormal. At the operation the laminæ of the seventh, sixth and fifth cervical vertebræ were removed. No fracture was found, and no hemorrhage either extra- or intra-dural. The dura was very tense, and darker in color than normal, and on being pricked, clear fluid spurted out with much force. No evidence of pressure upon the cord was found so far as could be told by exploring with a probe. Pulsation returned after the evacuation of considerable fluid. The cord felt normal to the touch. On November 2d it was noted that the patient could move the arms slightly, and that there was a questionable improvement in sensation. The temperature, however, rose that afternoon, and the patient became delirious and died at ten o'clock that evening.

The autopsy was made by Dr. Mallory the next morning. Only the spinal cord could be examined. The body was that of a large and well-built man. There was an incised wound in the median line of the lower part of the back of the neck, about seven centimetres long. On laying open the vertebral canal, the spinous processes and posterior laminæ of the fourth, fifth and sixth cervical vertebræ were found to have been removed by the surgical operation. The walls of the opening leading into the vertebral canal were grayish in color. There was apparently no pus present. On laying open the vertebral canal a small amount of dark red material was present on the posterior surface of the cord, apparently blood and fibrin. After removing the cord, and opening the dura along the posterior surface, there was found in the cervical portion, 2.5 centimetres above the operation opening into the vertebral canal, a slightly depressed bluish line encircling the cord. On pressure at this point the tissue was softer than the tissue above and below. This linear area of softening was situated about opposite the third cervical nerve. There was no swelling of the cord and no hemorrhage. Examination of the bodies of the vertebræ revealed no signs of fracture.

Anatomical diagnosis. — Softening of the cord.

After hardening in formalin the cord showed distinctly the band of softening at the third cervical segment, not more than two millimetres in width. On section through this area there was a dark area in the centre, more marked in the region of the anterior horns, which could be seen extending about half a centimetre in the anterior horns, both above and below the area most damaged, but extending a little further in the right anterior horn than in the left one. Sections through other regions of the cord showed nothing abnormal.

(To be continued.)

THE ROLE OF THE STAPHYLOCOCCUS IN SKIN DISEASES.[1]

BY CHARLES J. WHITE, M.D., BOSTON.

One cannot attend a daily skin clinic without being struck with the frequency with which pus is encountered in the many various diseases which are presented for diagnosis. The conditions where pus is present may be divided into two categories; (1) where the disease is primarily and essentially of pustular origin; and (2) where pus is a secondary element due to accidental inoculation. In the first division we find impetigo, sycosis (non-tricophytica), ecthyma, furunculosis, abscess and carbuncle; and in the second I mention especially acne, impetiginous eczema, some forms of dermatitis, scabies, certain varieties of iodide and bromide eruptions, and afterwards the primarily vesicular and bullous affections and all cutaneous diseases where pruritus and subsequent scratching play a part. To show a little more precisely how important a place our first division occupies in skin clinics, let me quote a few figures from the returns of the American Dermatological Association, which date from 1877, and of local interest from the records of the skin department of the Massachusetts General Hospital. From the former source we find that the group impetigo, sycosis, ecthyma, furunculosis, abscess and carbuncle constituted 5.19 per cent. of all skin diseases recorded, and from the latter records we learn that these same dis-

[1] Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

cases comprised 0.6 per cent. of all the cases observed. As to the precise figures in the secondarily pustular affections it is impossible to speak, as of course there are no such minute statistics in existence. Suffice it to say that in my investigations the secondarily pustular diseases were exactly twice as numerous as the essentially pustular affections.

Now what is the etiological factor in this important class of dermatoses? Before mentioning the results of any personal work let us see what the more important investigations of others have recorded in this connection, and let me acknowledge here my indebtedness to Unna and to Wickham for many of the extracts which I shall make in the following paragraphs.

In 1877 Vidal made some inoculations from cases of impetigo and concluded his monograph by asserting the possibility of reproducing this disease by inoculation — a fact which, in his mind, established impetigo as a definite dermatological entity. This was, I think, the first experimental work done in connection with this disease. Hebra had never allowed the existence of impetigo as a separate disease, but had considered it a variety of eczema. Tilbury Fox in 1862 had, however, paved the way clinically for the many subsequent investigators, among whom Vidal was the first, as above stated. Three years later, in 1880, Unna produced an essay claiming the inoculability and autoinoculability of impetigo and differentiated it from eczema. In 1881 Crocker found chains of cocci in microscopical specimens from impetigo. In 1885 Eichstedt described an epidemic of impetigo in 76 out of 79 children recently vaccinated in Rugen, and considered the affection as a definite one which was inoculable only by intimate contact. This same year Dewérve made a series of inoculations from all products of impetigo and succeeded often in obtaining cultures. Eight years later, in 1893, this same writer produced impetigo artificially by rubbing lice from an impetiginous child upon the skin of a healthy child, and concluded that pediculi were the carriers of the disease — an observation to which many recent writers would agree, although Unna claims merely coincidence.

Bockhart, in 1887, established the extremely important fact — one which Unna characterizes as epoch-making — that from an inoculation from impetigo, one could produce impetigo, folliculitis and furunculosis. This assertion has been verified by other observers, and, I think, has been denied by none. Bockhart thus claimed that several diseases, hitherto considered separate and distinct entities, were practically one and the same, that one could pass into another and that the clinical forms were due to a difference in soil, seat and individual, and not to a separate etiological factor. Bousquet two years later proved that these diseases were due to cocci and reiterated the statements of Bockhart. A few months later Dubreuilh — Bousquet's master — said that "the staphylococcus aureus and perhaps the albus were the pathogenic organisms," and claimed that there is only one impetigo and that it is inoculable; that furuncles are of the same origin, but lie at a different level of the skin; and that the pustules of scabies are etiologically similar to impetigo and to furunculosis.

In 1890 and 1891 Leloir described many inoculations from cases of impetigo and found only staphylococcus pyogenes aureus or albus and concluded that all forms of impetigo were inoculable. The following year Leroux continued the work and isolated staphylococcus aureus, albus and citreus and a peculiar form of streptococcus. Dupray spoke only of staphylococci in his thesis in 1891, and some months later Wickham came to similar conclusions in an excellent monograph, from which I shall now quote at some length.

Wickham found that on inoculating from impetigo, first from vesicle, then from pustule, then from crust, and finally from excoriation under the crust even after disinfection with alcohol, pure staphylococci resulted each time, and concluded: (1) that staphylococci are found in all secretions of impetigo, in the vesicles as well as in the pustules; (2) that the staphylococci exist in abundance in the inflamed tissues, and that they are in the serous exudations even at the moment of their issue; (3) and that each variety of staphylococci can be met with alone or in company with another variety. Wickham inoculated himself on one forearm with the albus and on the other with the aureus. In three days a few miliary pustules appeared, which quickly disappeared. He then took a culture of aureus and albus from a non-tricophytic sycosis and one from a purulent zoster and inoculated himself again and found the same results, from which he decided that he did not offer a suitable soil, so he repeated the experiment on a strumous child and produced a typical impetigo contagiosa, which began as an erythema and incipient vesicles within two days and went through the stages of pustulation and crust formation. He then concludes: (1) that the inoculation of cultures of staphylococci can reproduce complete impetigo; (2) that the inoculation of staphylococci, whether aureus or albus, produces analogous lesions; (3) that the staphylococci of impetigo are identical with those of other suppurations, that is, sycosis, pus of secondary infection; (4) that certain subjects are rebellious to inoculations and that to succeed one must have great perseverance and irritate the skin violently and apply thick layers of micro-organisms; and (5) that a lymphatic soil predisposes to impetigo.

In concluding his monograph, Wickham writes: (1) That certain affections described heretofore as separate diseases — such as impetigo, sycosis non-tricophytica, paronychia, ecthyma, furuncle, folliculitis and carbuncle — are sister maladies, of the same essence; and that the same micro-organism can produce one or another of the aforesaid diseases; (2) that several of these diseases can be found united in the same individual; (3) that therefore none of these affections should be given a special designation, but these diverse affections are not special entities but only pathological forms of a cutaneous malady, more general, polymorphous *par excellence*, produced by the staphylococcus, and to which it would be suitable to give such a name as staphylococcia purulenta cutanea.

In 1893 Kurth was the first of the modern investigators to associate streptococci with the name of impetigo. Kurth considered staphylococci only as companions of his streptococcus, which differed in many ways from the streptococcus of Fehleisen. Three years later Brochet published results of a similar nature, but to many his streptococcal theory would appear invalid, since re-inoculations from his isolated streptococci produced a lymphangitis and not an impetigo or a folliculitis. Brochet, however, differed from Kurth and others in that he considered his

streptococcus to be the same as that of erysipelas, only in an attenuated form.

In 1896 Armstrong observed a series of impetigo cases in Edinburgh football players, and stated that staphylococci were the active agents in the disease. In the following year Balzer and Griffon studied 31 cases of impetigo and 14 of ecthyma, and satisfied themselves that streptococci were the cause of the infections, but re-inoculations produced abscess, erysipelas and fatal septicemia, and not the original diseases.

Two years ago Curry conducted a series of pathological investigations, and from his results I quote those which apply to the question we are considering. In 6 pustules he found that 4 were due to the staphylococcus pyogenes aureus, 1 to the bacillus of diphtheria, and 1 to the bacillus pyocyaneus. [I would say that the diphtheritic pustule was due to an accidental inoculation from a case of that disease, and is therefore a case by itself.] In 6 furuncles Curry found that 4 were due to the staphylococcus aureus, 1 to the streptococcus and 1 to the bacillus pyocyaneus. In 3 cases of felon he found only the staphyloccus, in 3 carbuncles a similar result, and in 18 abscesses he showed that 13 were due to the aureus, 4 to the albus and 1 to the streptococcus. This year Corlett found, on examining 9 cases of impetigo, that 3 were due to the staphylococcus aureus, 3 to the albus and 3 to the aureus and albus together.

Thanks to the kindness of Dr. R. M. Pearce, I was allowed to examine the Surgical and Medical Reports of the Pathological Laboratory of the Boston City Hospital, and from them I have selected 1 case of sycosis, 3 of furunculosis, 2 of carbuncle and 95 of cutaneous abscess. The 6 cases of sycosis, furunculosis and carbuncle were due to pure infections of staphylococcus aureus, and in 79 of the 95 abscesses, that is, in 83 per cent., the staphylococcus in some form was found in a pure state or in conjunction with one or more organisms. To be more precise, I append this table of the analysis of the bacterial examination of the 95 abscesses: In 31 cases the staphylococcus aureus was found alone; in 13 cases the staphylococcus albus was found alone; in 14 cases the two were found in conjunction; in 7 cases the staphylococcus aureus and the streptococcus were found; in 7 cases the staphylococcus albus and the streptococcus were found; in 2 cases the staphylococcus aureus and the pneumococcus were found; in 2 cases the staphylococcus aureus and a diplococcus were found; in 1 case the staphylococcus albus and the bacillus coli communis were found; in 1 case the staphylococcus aureus and albus and the streptococcus were found; in 1 case the staphylococcus aureus and albus, the streptococcus and the bacillus pyocyaneus; in 14 cases the streptococcus in pure cultures was found; in 3 cases the pneumococcus in pure cultures was found; and in 1 case the bacillus pyocyaneus in pure culture was found.

When Unna published his text-book in 1894 he believed that staphylococci were the cause of impetigo, and said that if we examined the interior of impetigo pustules we should find staphylococci. Now, after a lapse of five years Unna, in collaboration with Frau Schwenter-Trachsler, in a brilliant series of articles, has abandoned his former belief and claims that a special streptococcus is the pathogenetic factor. One point, however, is especially striking, and that is that he no longer searches for the cause in the primary, unbroken pustule, but in the characteristic, exuded, coagulated serum of the impetigo crusts. It is hardly fitting for a young writer to question the verdict of so experienced an authority as Unna, but I should certainly agree with the opinion of Crocker when he says "that search has been made in the crusts (for the cause of impetigo), but their liability to become contaminated is so great that no deductions can be drawn from such observations."

Unna differentiates his impetigo coccus from the streptococcus vulgaris by the following characteristics, which we see are quite unusual: "The chains are always short and composed of from four to six cocci; the chains are quite straight, or at most slightly curved; the chains never form loops or curves; the cocci are irregular and differently shaped; the cocci have their long diameters at different angles; the contents of the cocci often receive the stain unevenly; the colonies are thick and irregular, with several short, apparently broken off, branching twigs."

Thus, at too great expense of your patience, I fear, I have stated the bacteriological history of impetigo and its sister affections — sycosis, ecthyma, furunculosis, abscess and carbuncle, and I think it is fair to claim that the great majority of investigators concur in the opinion that they are all probably of staphylococcal origin. There have been a few notable exceptions where men have believed in the streptococcal theory, but to our way of thinking there have always been serious flaws in their arguments.

My own investigations relate to the examination of all pustular lesions which were presented at the skin clinic of the Massachusetts General Hospital between February 23d and April 13th of this year. The material for inoculation was in all cases taken from under the unbroken skin. In enumerating the diseases I shall divide them into the two groups which I have described above, and must explain the comparatively small numbers of impetigo and ecthyma by the fact that these studies were carried on during the cooler months when poor children play mostly at home with their arms and legs protected by clothing.

In the first group there were 11 cases of impetigo, 10 cases of sycosis, 14 of furunculosis and 2 of carbuncle. In the second group there were 39 cases of acne vulgaris, 11 of dermatitis, 4 of syphilis, 3 of ringworm, 2 of lupus vulgaris, 2 of herpes, 2 of scabies, 2 of impetiginous eczema, 3 of iodide of potash and 1 of bromide of potash dermatitis, 3 of dermatitis venenata, 1 of herpes zoster and 1 of tuberculous gumma — in other words, 111 examinations. From this number the staphylococcus pyogenes aureus or albus appeared 88 times, the bacillus subtilis 4 times, the micrococcus tetragenus 3 times, the streptococcus 4 times, a doubtful bacillus once and in 24 instances the tubes remained sterile. From 12 cases there were two different bacteria isolated and in 1 case three were found. Thus, excluding the sterile cases and the non-pyogenic organisms, we find that in the first division of diseases there were 36 infections from staphylococci and 1 from streptococci, while in the second division there were 45 from staphylococci and 3 from streptococci.

Therefore, these Boston figures lend themselves in a very striking manner to the theory of the staphylococcal origin of pustular affections of the skin, and to

emphasize my testimony more strikingly I append the following table:

FIRST DIVISION.

	Staphylococcus aureus.	Staphylococcus albus.	Streptococcus.	Sterile.	Uncertain.
Impetigo	7	3			
Sycosis	7	2			
Furuncle	9	2		2	
Carbuncle	2				

FIRST DIVISION (cases with double infection).

Impetigo	2	1	1	
Sycosis	1	1		
Furuncle	1	1		

SECOND DIVISION.

Acne	1	20		14	1
Dermatitis	4	2	1	1	
K. I. dermatitis				2	
K. Br. dermatitis				1	
Scabies	1	1			
Impetiginous eczema,	2				
Zoster		1			
Herpes				1	
Ringworm				1	
Syphilis		3			
Lupus vulgaris	1			1	
Dermatitis medicamentosa		1			
Dermatitis venenata	2				

SECOND DIVISION (cases with double infection).

Acne	2	2	
Dermatitis	2	1	
Scrofuloderma	1	1	
Herpes			1

And now in closing let me say a few words about impetigo contagiosa from a clinical standpoint. Etiologically I hope I have made it clear that the disease is in all probability due to the specific action of staphylococci, and in this connection I want to speak of its far greater prevalence in warm weather.

In the skin department of the Massachusetts General Hospital in 1897 there were 118 cases of this disease recorded; in 1898 there were 206 — a gain of almost 100 per cent. When we recall the two summers and the two autumns and contrast them one with the other, we shall remember that in 1898 we had an unusually severe summer heat which made itself felt almost into December, while in 1897 we had a comparatively cool summer and an average autumn. Now, if we look at the following table we shall see more strikingly how closely the figures correspond to the severity of the heat.

1897,	First quarter	21 cases.
"	Second quarter	14 "
"	Third quarter	51 "
"	Fourth quarter	32 "
1898,	First quarter	34 "
"	Second quarter	30 "
"	Third quarter	74 "
"	Fourth quarter	68 "

There is another etiological point which I wish to bring to your notice, and that is the presence of pediculi on the scalp. I have no direct figures to present in this connection, but you all have noted this coincidence in your practice among the poorer classes. I do not lay too much blame upon pediculi as direct agents in the genesis of impetigo, although I have stated above that Dewévre proved that the disease could be produced by rubbing pediculi from an impetiginous child upon the skin of a healthy child; but I do wish to emphasize the fact that by their presence a scratching of reflex origin is established which causes the child to inoculate himself with the staphylococci which surely abound under his finger nails. The presence of pediculi is therefore a condition upon which we must all strive to make war, and especially among school-children, where the disease is so prevalent. This crusade is now being carried on in the Boston public schools, and, I think, with success.

Another point is that in warm weather poor children play about the streets more than in the colder months, and these same children are apt to wear very little clothing when the heat is intense. Therefore, in summer and in autumn we see impetigo scattered over the whole body, and especially about the face, lower arms and hands, lower legs and feet; while in winter, except in babies, the disease is generally limited to the vicinity of the mouth, nose, ears and eyes.

As to the age at which impetigo contagiosa appears, it is safe to say that nine-tenths of the cases occur in childhood, but there are, however, instances of the affection in adults, and of this latter class I want to say a few words, as it is a condition not quite well enough understood by the general practitioner. In children the clinical picture is quite constant, and we are all well acquainted with the uneven, thin, moist, superficial crusts, varying in color from lemon yellow to orange, which appear, often in the midst of superficial, oozing excoriations upon the more exposed parts of an otherwise rather dirty child. When we come to the adult type, however, we meet a very different condition. Here we find that the subject is almost always a young man, and the seat of the lesions generally the shaven part of the face. We find very often an interesting succession of infections occurring in members of the immediate family or in the patient's intimate companions. The lesions are usually just below the horny layer of the skin and consist of broad, very shallow pustules extending about the shafts of the hair and covered with yellowish white scales. The progress of the disease is very rapid, and for this reason we are not apt to see isolated lesions, but irregular, gyrate groups covering a considerable area of one or both cheeks. This type is not associated with pediculi, and we seldom if ever find these animal parasites or any evidence of scratching, but we do inquire about the habits of the patient, and often learn that he is shaved at a barber's shop or uses a companion's towel. Here again, therefore, we must enter another plea for more careful cleanliness among both barbers and the public, and demand a more thorough disinfection of the implements and the utensils of the toilet, both public and private.

As to the treatment, there are only a few words to say. In the juvenile type plenty of soap and water at frequent intervals, an application twice daily of a five-per cent. boracic-acid ointment and a thorough soaking of the scalp with crude petroleum for three successive days will, within a week, destroy all active evidences of the disease. We must, however, often wait several weeks for the brilliant erythema, which underlays the crusts, to disappear. In the adult type, on the other hand, we must use rather stronger drugs and must expect a rather longer treatment before the activity of the process is checked. A five-per cent. ointment of sulphur, or the application of black wash for fifteen minutes night and morning in conjunction with a five-per-cent. ointment of salicylic acid and carbolized cosmoline, will usually prove sufficient to cope with the bacteriological invasion. Here again soap and water and clean towels, razors, combs and brushes are indispensable if we wish to be free for now and all time from impetigo contagiosa.

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MULTIPLE ULCERS OF THE VULVA AND VAGINA IN TYPHOID FEVER.

BY AUGUST JEROME LARTIGAU, M.D.,

Assistant in Pathology and Bacteriology, Bender Hygienic Laboratory, Albany, New York.

PERHAPS no subject connected with typhoid fever has latterly excited so widespread a scientific interest as the bacteriologic relations of the bacillus typhosus to the complications and sequelæ of this malady. A whole series of diverse lesions in many organs and tissues have been described for which this specific organism has been held responsible; but, notwithstanding the not uncommon dissemination of Eberth's bacillus in the most remote and varied tissues, invasion of the female organs of generation is an accident of comparative infrequency. The disparate reports of gangrenous processes, abscesses, or other more or less extensive lesions involving the vulva and vagina have been collected by Keen,[1] but multiple ulcerations of the character described in the two cases reported herein are unknown to us in literature. In one case a bacteriologic study of the ulcerations was made and the typhoid organism found in almost a pure culture; in the second case no opportunity presented itself for similar investigation.

CASE I. Emily C., single, sixteen years of age, American, entered the Albany Hospital, April 3, 1898, complaining of headache, backache, and general malaise.

Family history. — The father is alive and well; the mother is dead, the cause unknown. One brother and one sister are alive and healthy.

Past history. — The patient cannot recall any past illness. Menstruation began at fourteen years, and has been normal.

Present sickness. — About two weeks ago she was taken sick with headache, pain in the back, and some fever. Several days afterwards pain developed in the left side of the vulva, which was accentuated on urination. On March 31st, two days after the appearance of the trouble in this region, a physician was called in and found a number of small superficial ulcerations on the labia majora and just within the vaginal orifice. From the beginning of her sickness until admission to the hospital the anorexia has been almost complete; bowels constipated.

On admission into the hospital the temperature taken in the mouth was 102.8° F.; pulse regular, of fair volume and 100 per minute; respirations 26. At this time the following note was made: Patient is a delicately built, fairly well-nourished girl; skin pale and moist; pupils normal; mucous membranes pale; conjunctivæ slightly suffused. Tongue covered on the dorsum in the middle with a thick brown fur; papillæ prominent. No edema. No glandular enlargements. The cardiac dulness is not increased; heart sounds normal, except the pulmonic, which is somewhat accentuated; lungs are normal. The splenic dulness is somewhat increased; spleen is just palpable on deep inspiration just below the costal border. The liver dulness is apparently normal. The abdomen is generally tender, more especially in the hypogastric region. No ileocecal gurgling. Examination of the genitals showed about ten or twelve very small superficial, round or less often oval, sharply defined ulcerations located on the cutaneous and mucous surfaces of the labia majora, labia minora, and just within the vaginal orifice and external to the hymen. The margins are clear cut, and the bases covered with a thin layer of thick, yellow, purulent material. These ulcerations vary in size from the largest ones, which have a diameter of one centimetre, to those measuring about three millimetres. They involve only the superficial layers of the skin. No discharge from the urethra or the vagina could be detected.

April 5th, 10 A. M. Complains of pain in ankles and left chest. The ankles are free from swelling, but tender to palpation. Lungs normal. Physical condition practically unaltered. Pulse 102, regular, fair volume, not dicrotic; highest evening temperature yesterday was 104.2° F. Ulcerations on genitals present a similar appearance to that when first seen. Cover-slips were made and several cultures taken from different ulcerating points.

April 7th, noon. Considerable pain in abdomen, which is tender and tympanitic. Temperature 105° F. this morning at 10 o'clock. Mind clear. Chest normal. Urine is normal in quantity, highly colored, and contains neither albumin nor sugar. Microscopic examination shows no casts.

April 12th, 11 A. M. Cultures taken on the 5th contain growths of the typhoid bacillus. Widal reaction is positive. Patient's condition improved. Vulvar ulcerations completely healed.

April 16th, 10.30 A. M. Abdomen tympanitic and tense; spleen easily palpable; pulse 98 and regular; temperature 102.8° F.

April 24th, noon. Heart sounds weak; lungs show nothing abnormal. Improvement continues.

May 2d, 11 A. M. The temperature has been normal for four days. Two cultures were taken from the urine on the 25th of April and the typhoid organism was isolated from one of the specimens.

[1] Keen: Sequelæ and Surgical Complications of Typhoid Fever, 1898.

From this convalescence has been rapid.

Bacteriological examination. — Two cover-slip preparations were made from two different ulcerations on the labia minora and stained with aniline gentian-violet. They both contain many bacilli of medium thickness and length, with rounded ends, morphologically similar in both specimens, which easily decolorize by Gram's method. Three cultures were made on agar-agar slants from three various ulcerating points and subsequently plated in agar-agar in the usual manner. All plates contained an abundant growth of discrete, round, pin-head or smaller, white, finely granular colonies with a regular outline. The colonies are all made up of bacilli similar in morphology to those in the cover-slips. In one plate a single, yellowish-white, round, pin-head-sized colony grew in addition to the other colonies. Further investigation showed this colony to be made up of cocci, frequently in pairs, not decolorizable by Gram's method and identified as the micrococcus subflavus (Flügge). Experimentally this organism showed no virulency whatsoever; two cubic centimetres of a thirty-hour bouillon culture introduced subcutaneously into the thigh of a full-grown rabbit produced neither local nor general effects; an intravenous inoculation of one cubic centimetre of a twenty-six-hour bouillon culture likewise produced no reaction.

The bacillus on slant agar grew as a fine, translucent, gray, moist growth, slightly elevated above the surface. Gelatine was not liquefied. Stab inoculations in glucose, lactose and saccharose agar produced no gas. Litmus milk was turned faintly pink but not coagulated. On potato the growth was moist, glistening and almost invisible. Bouillon and Dunham's solution became diffusely cloudy at the end of twenty-four to forty-eight hours. No indol reaction could be obtained in Dunham's peptone solution. Young bouillon cultures contain bacilli, actively motile, which when stained by Pitsfield's method show eight to fourteen flagella (petechial arrangement). The bacillus was repeatedly tested with known typhoid sera and a positive Widal reaction was in each instance obtained.

CASE II. Nellie C., twenty years of age, was admitted to the Albany Hospital, suffering with severe pain in the loins and some headache. She had been sick about two weeks. On admission the temperature was 103.4° F.; pulse 100, and dicrotic. The spleen was palpable. Rose spots were discovered two days after entrance; and the blood, which was tested on the sixth day, gave a well-marked Widal reaction. The subsequent course of the disease was that of a severe typhoid fever, which culminated in the death of the patient on the eighteenth day of her stay in the hospital.

On the second day the nurse called the attention of the house physician to the existence of a number of ulcerations on the vulva. Inspection of the genitals showed the presence of nine or ten small superficial ulcerative lesions varying in size from those having the diameter of a pea to two or three measuring fully one centimetre. Some were round; others irregularly oval; all were well defined, with sharply cut margins, and the bases were covered with a small quantity of yellow muco-pus. The superficial strata of skin appeared involved only. Unfortunately no bacteriologic study was made of the ulcerations.

With the knowledge of the existence of typhoid bacilli in the urine the probability of the manner of infection becomes obvious in the first patient, although the possibility of the origin from minute bacillary emboli should not be forgotten; the number of ulcerative points, however, is less coherent with that possibility than with the not unlikely urinary origin of infection.

In conclusion, we wish to express our gratitude to Drs. Samuel B. Ward and Howard Van Rensselaer of Albany, N. Y., for the opportunity to study and report these cases.

NOTE. — Since the preparation of this report Dr. Hennessy, of this city, tells me that he has met with similar ulcerations in a case of typhoid fever in which, however, no bacteriological study was made.

Medical Progress.

REPORT ON PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D., AND JOHN W. BARTOL, M.D., BOSTON.

AORTIC ANEURISM AS THE CAUSE OF HYPERTROPHY OF THE LEFT VENTRICLE.

CALVERT[1] says that as there has been considerable conflict of opinion on this subject, he thought it worth while to see what light the post-mortem records of St. Bartholomew's Hospital threw upon it. He found that of 124 cases of aneurism of the arch of the aorta, 68 showed no hypertrophy, while in 47 it could be perfectly explained by other causes and in nine it very probably could. Therefore, so far as these records are concerned, there was practically no evidence in favor of aortic aneurism being the cause of hypertrophy of the left ventricle.

In the discussion which followed, Dr. Lazarus-Barlow said that the records of St. George's Hospital for the last two years entirely bore out Dr. Calvert's conclusions, for of 13 cases, it was expressly noted in eight that there was no hypertrophy and in the five cases in which it was present it was accounted for by aortic regurgitation or granular kidney. These results are in line with what he had already stated in his "Manual of Pathology," that hypertrophy of the left ventricle would not be expected unless the case was complicated by the presence of a lesion of the aortic valve. He doubted whether atheroma of the aorta by itself would cause hypertrophy, except in the very rare cases where it gave rise to some stenosis, but arterial sclerosis affecting the smaller arterioles was a frequent cause.

TREATMENT OF ANEURISM WITH SUBCUTANEOUS INJECTIONS OF GELATINE.

In June of 1897 Lancereaux,[2] in collaboration with Paulesco, called attention to a new method of treatment which he had been led to try by the previously reported effects of gelatine injections in increasing the normal coagulability of the blood. He showed at that time a patient with large aneurism of the aortic arch cured by this method, and he has since presented another case of aortic and one of subclavian aneurism with equally good results.

This success has led him to make claims for the method which have not been entirely shared by certain of his *confrères*, who, while acknowledging the

[1] Lancet, January 14, 1899.
[2] Bull. de l'Acad. de Méd., 1897; Gaz. d. Hôp., 1898; La Sem. Méd., 1897 and 1898.

great possibilities of the measure and admitting the triumph of his cases, urge, on the basis of their own experience, the danger of fatal result from thrombosis in other localities than the one desired. In reply Lancereaux maintains that the clotting will take place only where the vessel wall has undergone change, that is the aneurismal sac, and in view of certain obvious errors he feels justified in calling in question their methods. His directions are as follows: The solution is made with four grammes of white gelatine in 200 cubic centimetres normal salt solution and sterilized at 120° centigrade. For injection a flask is fitted with a rubber stopper traversed by two glass tubes, one of which reaches to the bottom of the flask and externally is attached by a rubber tube to a needle of large calibre; the other glass tube is short and is connected with a bulb or Potain inspirator. After thorough sterilization of apparatus and site of injection (preferably the buttock), the needle is plunged deeply into the subcutaneous tissues and the injection should not take over quarter of an hour. There is little if any pain and no marked systemic reaction. The patient should be kept absolutely quiet for a time and palpation of the sac should be avoided. Injections, which may consist of 100 to 200 cubic centimetres, should be repeated every six to eight days until the sac is obliterated.

CHRONIC MEDIASTINITIS; INDURATIVE MEDIASTINO-PERICARDITIS.

Whipham,[3] on the occurrence of a case in his own service, was able to collect from the post-mortem records of St. George's Hospital only four cases in a period of fifty years; with these four he has tabulated eight others from different sources, and in addition makes an abstract of a report of 25 cases by Harris.[4] He excludes from his own list pericarditis occurring in children as a complication of rheumatism or other diseases, unless the inflammation involved other structures in the chest as well as the pericardium, and also those cases where the matting together of the thoracic viscera by fibrous tissue was the result of tuberculous pleurisy.

Perhaps the most striking thing to be gleaned from the analysis is the great lack of suggestive diagnostic symptoms or evident etiological factors, even in the cases where the pathological changes were very extensive. So far as definite conclusions can be reached, the following seem most important:

Age and sex. — The apparent preponderance of cases in adult life is probably due to the natural chronicity of the disease, death not occurring until after a lapse of years. The proportion of males to females is four to one.

Causation. — Rheumatism is not an important factor, nor does any antecedent disease seem particularly to predispose to the condition. Tuberculous conditions may or may not coexist. The concurrence of chronic peritonitis with ascites is noticeably frequent.

Heart. — Hypertrophy of the heart is not a necessary result: in only 11 of 36 cases is enlargement noted; there may be extensive mediastinal changes while the heart remains normal or even diminished in size as result of contraction of adhesions.

Pericardium. — In the majority of cases the cavity is either partially or entirely obliterated by fibrous adhesions.

[3] Lancet, April, 1899.
[4] Medical Chronicle for 1895.

Pulse. — The rate is almost invariably accelerated, and in the majority of cases has been 100 or over. Pulsus paradoxus occurred in only nine of the cases included in the report, and in 50 per cent. of the cases in which it was observed no constriction of the large vessels by fibrous growth existed.

Diagnosis. — Especial attention is called to the difficulty of making a diagnosis and the plausibility with which the physical signs might be explained as depending on other conditions. The following are given as significant: puffiness of the face, cyanosis of the lips, edema of the thoracic walls, prominence of the veins of the arms and neck, and ascites.

Treatment. — From the nature of the process it is evident that, even with diagnosis established, there is little other than symptomatic indication for treatment.

LATENT AND EPHEMERAL PERICARDIAL EFFUSION.

Ewart[5] makes valuable addition to papers already published by himself[6] on recognition of pericardial effusions.

The first paper dealt with the value of certain diagnostic signs to which he attaches great importance but which have not been implicitly accepted by other observers; for example, the posterior pericardial patch of dulness; the first rib sign; the posterior patch of tubular breathing; tubular breathing below right mamma, etc.

In the other two communications he draws attention to an interesting condition which he is lead to believe exists much more frequently than is suspected by most clinicians (himself until lately included), namely, a pericardial effusion of small amount and brief duration, occurring "independently of acute inflammations, most commonly under the influence of rheumatism, of Bright's disease, and of valvular affections." He reports half a dozen illustrative cases where the condition might easily have escaped any but the most careful examination (the value of actual tracings noting results of percussion and auscultations, taken as a daily serial for comparison, is emphasized), and in conclusion makes the following summary: Pericardial effusion occurring as above noted may last not more than one to three days, after which complete absorption takes place. Owing to its moderate size and to the absence of the painful symptoms of pericarditis, and of the worst pressure symptoms, the effusion seems to be commonly overlooked. The dulness due to it is apt to be mistaken for an increased area of cardiac dulness and usually for cardiac dilatation. The pathological etiology of these effusions is not clear. They may arise from some acute inflammatory process, or more commonly, perhaps, they are passive, that is, dependent on some temporary alteration of the general or of the lymphatic circulation. Their spontaneous recovery in most cases shows that no special treatment is necessary. Re-absorption would obviously be hastened by diaphoretics, diuretics and cathartics.

(To be continued.)

[5] Trans. Clin. Soc., Lond., 1897.
[6] Brit. Med. Jour. and Lancet, 1896.

SPREAD OF PLAGUE. — Plague is reported to have appeared at Alexandria, in Egypt, and fourteen cases with two deaths have been reported. It has also broken out in Bushire in the Persian Gulf.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

REGULAR meeting, Monday, May 8, 1899, DR. R. H. FITZ in the chair.

DR. J. J. THOMAS reported

TWO CASES OF INJURY OF THE CORD RESULTING FROM FRACTURE OF THE SPINE.[1]

DR. KNAPP: I think Dr. Thomas has put very well the diagnostic points between a fairly complete crush of the cord and a partial injury. There is one symptom which has impressed me occasionally in fractures in the lower part of the spine; that is a rapidly developing tympanites which is indicative, I think, of a complete crush of the cord. Not very long ago I saw a young woman who had rolled out of a window some twenty or twenty-five feet high, coming down upon the railing of a piazza and striking upon the lower portion of the spine. She at once had complete paraplegia, loss of sensation, paralysis of the bladder and rectum, and within a very few hours this marked tympanites had also developed. Spinal surgery was resorted to, although I felt at the time that it was entirely hopeless. The result was that the operation was useless, for there was a complete crush of the cord. Supposing we diagnose between a complete crush and partial injury, even then the promise of spinal surgery is on the whole slight, for, as a rule, if the cord is only partly crushed, operation will not help. Last year I saw a case which Dr. Graeme Hammond showed at the meeting of the Neurological Association in New York, which I supposed was the best result yet obtained by spinal surgery. The patient was a wrestler, who in wrestling had received a fracture of the cervical vertebræ, and for two or three weeks had been completely paralyzed. After an operation he made a complete recovery so that he resumed wrestling and was able among other things to do the bridge, in which he supported himself on the hands and feet on the ground with the back downward, holding himself so that the opposing wrestler could not force his shoulders down upon the floor. Theoretically we can imagine cases where spinal surgery may do some good — cases of extra-medullary hemorrhage and cases where the vertebræ have been broken with such extreme delicacy that the fragment comes down just so as to touch the cord and to press upon it enough to cut off conduction, but not enough to injure the delicate substance of the cord itself. Those cases are theoretical; they can be conceived, but practically it must be an exceedingly difficult process to exert the violence in such a way as to break the vertebræ without doing more harm to the cord; the ordinary rule, of course, being that the fragment is rapidly and forcibly driven upon the cord and springs back again into place, causing an immediate crush and not a long-continued pressure. That I think Dr. Thomas has shown very clearly in the cases which he has reported.

The explanation of the question of the knee-jerk is certainly puzzling. Brissaud has recently gone over the subject, and has laid considerable stress upon the point which Dr. Thomas has brought up, as to the possibility of injury either to the anterior horns, or to the cells of the anterior horns, or to the nerve trunks or nerve roots. In a very large number of these cases of injury in the cervical region the patient does not live long enough, even if his death is not aided by spinal surgery, for us to discover whether the knee-jerk may or may not eventually return. A good many years ago I was inclined to believe that irritation in the upper portion of the pyramidal tract might cause for a time a loss of knee-jerk. I remember in particular one case of a negro, whom I think Dr. Webber may possibly remember in his service at the City Hospital, with a syphilitic history, who had, I believe, a sudden paraplegia coming on during coitus. He had all the symptoms of a transverse myelitis, with a complete loss of knee-jerk. It was before the days of reinforcement, but under the ordinary conditions the knee-jerk could not be obtained. With that there was complete paraplegia, complete anesthesia, and paralysis of the bladder and rectum, but after he had gone on for a number of weeks in that condition the knee-jerk returned and there was a marked exaggeration, with clonus. Whether in these cervical cases, where there is a pretty complete crush, the knee-jerk may return at the end of six or eight weeks is still uncertain, because, as a rule, too few of the cases live for us to determine that point; although one case of absolute division of the cord which I remember, where there had been laminectomy, and the two ends of the cord were seen absolutely divided in the spinal canal in the upper or mid-dorsal region, there was a complete absence of knee-jerk about a year after.

DR. WEBBER: I remember the case that Dr. Knapp referred to at the City Hospital, and another curious point in regard to it was that the coitus was in the standing position, and I remember seeing it stated that coitus in the standing position might cause myelitis. I do not remember any more of the particulars of the case than Dr. Knapp has spoken of, only I had an impression that the symptoms were not absolutely sudden, as in the case of injury or hemorrhage, but that some hours were occupied in the development of them. It is possible there may have been one or more very minute hemorrhages at the starting point for the myelitis.

In regard to Dr. Thomas's paper I have been very much interested in the paper, and each point that I thought of speaking of as he read he fully covered in his discussion of the subject, so that I have nothing further to add. I was very much interested in his discussion of the knee-jerk, and the paper I think is a very instructive one in regard to the fact that in a great many of these cases there is no pressure on the cord. That point I think he has well brought out, and where there is crushing, the bones spring back into place and the canal is sufficiently clear for the normal cord to pass through without being pressed upon. Another point I thought was interesting was the small amount of hemorrhage which was found around the cord and perhaps the small amount in the cord itself. I have only seen a few cases of fracture. Recently I have not seen any, not being connected with a hospital, but in the few cases I have seen I do not remember any where the symptoms were such as to give any hope of improvement from operation. I think all the cases I have seen died,

[1] See page 233 of the Journal.

and the result appeared to be inevitable from the very beginning of the injury or when I first saw them.

Dr. Scudder: In the cases I have looked over recently I find that the weight of evidence is against surgical interference in these cases unless there is some definite lesion of the laminæ of the vertebræ. I have seen recently the microscopic sections made from two cases that were operated upon by laminectomy at the Massachusetts General Hospital (the sections were made by Dr. Taylor), in which I was very much struck by the fact that the dura was intact throughout the whole circumference of the cord. The microscopic findings in these cases have been described by Drs. Taylor and Lord in a report of the Boston Society of Medical Sciences.

I was also struck by the fact that in these cases the lesion of the cord was confined to the anterior surface of the cord, so that the surgeon upon removing the laminæ would detect no hemorrhage outside the dura, and would obtain no information as to the damage done. Moreover, could he have seen the anterior surface of the cord he could have done nothing to relieve the conditions present.

There is one surgical procedure that ought to be emphasized in this connection, and that is the immediate rectification of the deformity and the maintaining of the corrected position by plaster-of-Paris splint. Dr. Burrell ten or twelve years ago went over the cases at the City Hospital with reference to this method of treatment and its results, and he found that there is a certain number of cases with a distinct kyphos at the seat of the lesion, in which, by immediately correcting the deformity and holding it corrected, the symptoms have disappeared and the patients in a certain number of cases have recovered. Of course the number is few that have recovered. The procedure is, however, justifiable and is warranted by the facts.

Dr. Thomas: I will say in regard to Dr. Scudder's remarks, that I meant to include not the application of plaster-of-Paris, but extension when I spoke of replacement by hyperextension; and, of course, fixation should follow this, either by immobilizing the patient in bed by bags of sand, or by some other means. I think few surgeons would now advocate suspending the patient, because of the risk of injury in moving him about as much as that when practically the same results can be obtained upon a hammock by hyperextension or some such method as that.

Dr. J. L. Morse read a paper entitled

RENAL COMPLICATIONS OF THE ACUTE ENTERIC DISEASES OF CHILDHOOD.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at the Academy of Medicine, in New York City, May 9, 10 and 11, 1899.

(Concluded from No. 9, p. 221.)

Dr. Abraham Jacobi, of New York, read a paper on

FUNCTIONAL CARDIAC MURMURS.

From his observations of heart disease in children, who as a rule present a simpler problem than when we have to deal with the disturbing elements of adult age, Dr. Jacobi is convinced that real functional heart murmurs, murmurs due to faulty action of the valves or muscle without pathological change in the organ, are much rarer than formerly supposed. Recent studies of the myocardium show that its changes may sometimes give rise to murmurs. When the child's heart is developing the cavities enlarge, but the wall of the heart does not always grow thicker. During this period murmurs may be heard and they would appear to be due to myocardial insufficiency at certain times, constituting an organic, not functional, defect.

Dr. Howard S. Anders, of Philadelphia: I think Dr. Jacobi's paper and experience certainly has a tendency to clear the atmosphere. So far as my experience goes it has led me to the belief that the term "functional cardiac disease" can be largely done away with. Functional cardiac disease usually means relative insufficiency of one of the heart orifices; or if it means anemia we certainly have no reason to call it functional. If it is due to myocardial disease, or if there is an alteration in the constituents of the blood, the murmur is certainly not functional, but organic. It is far more accurate to call these diseases organic.

Dr. John C. Munro, of Boston: I hesitate to say anything in contradiction to what Dr. Jacobi said, but three years ago, in my surgical wards at the Boston City Hospital, I had the patients examined very carefully immediately preceding and following operation, regardless of the nature of the operation. Upon summing up our results, we found that a fair proportion of the cases — I cannot remember the exact figures — had a marked functional murmur (so-called) at the apex and base, with an accentuated pulmonic second sound during the period just preceding the operation, but within two or three days after the operation the murmurs disappeared. This was especially noted in women of the shop-girl class, in whom a murmur would rapidly appear when the operation was imminent, and disappear as rapidly if the operation was postponed or after its performance.

Dr. Harold Williams: It is customary to speak of those so called function murmurs as hemic and dynamic. There is no sufficient reason to believe that hemic murmurs really exist. Dynamic murmurs are, literally speaking, organic. This entire subject has excited much discussion. Dr. Prince, of Boston, examined many applicants for appointments as firemen and policemen and found that those who were very apprehensive suffered from a tumultuous action of the heart and had systolic murmurs which corresponded with all the requirements of regurgitant mitral murmurs. They were functional murmurs, due to interference with the function of the heart, and rapidly disappearing. He accounted for them by over-contraction of the left ventricle forcing the muscular mitral valve.

I have been struck by the presence of these functional murmurs in overtaxed hearts where the exact converse existed to what Dr. Prince found, namely, a too feeble contraction of the mitral valve. This too feeble contraction causes incomplete closure of the valve cusp and is consequently followed by mitral regurgitation. Thus it would seem that the so-called functional murmurs are really organic in that they are due to a temporary derangement of the organ. In the same way "organic murmurs" are functional in that their origin is a functional disturbance due to organic defect. It is therefore a question of nomenclature.

DR. JACOBI: There undoubtedly are functional murmurs, and those alluded to by one of the speakers as occurring before operation and some of the others mentioned are certainly of that nature. There are functional murmurs of other kinds. For instance, now and then in severe cases of chorea you will get a heart murmur for a day or two, which then disappears only, perhaps, to appear and disappear again later, and such a changeable murmur is certainly functional. The fact should be borne in mind that murmurs produced in veins have been mistaken for heart murmurs. West, eminent though he was, frequently made that mistake. As far as so-called hemic murmurs are concerned, which are attributed directly to anemia, I do not believe that they exist. Even in pernicious anemia or in infantile scurvy no such murmur may exist. This would prove that anemia by itself does not produce such a murmur, but when the anemia is of long standing and has affected the structure of the tissues, we may have a murmur which is the result of malnutrition of the tissues of the heart and of the blood-vessels. We cannot expect to find a hemorrhage from the blood-vessels, no matter what the condition of the blood may be, unless there is an abnormal condition of the vessels themselves. When the blood-vessels become undernourished by the condition of the blood, then there will be a hemorrhage. Something similar I think is the relation between anemia and functional heart murmurs.

DR. L. D. JUDD, of Philadelphia, read a paper on

HYGIENICS OF THE SKIN.[1]

DR. L. D. BULKLEY: Dr. Judd has certainly brought out this subject well. His views, however, as based upon his experience, are so diametrically opposed to mine that I hardly know what to say. For many years both summer and winter, I have been wearing underclothing of Scotch wool next to the skin, and I have certainly derived more comfort and benefit from it than from cotton underclothing.

I also differ from the doctor somewhat in regard to the amount of bathing. As a young man I was very enthusiastic about the value and necessity of the daily bath, but after I had been practising medicine for some ten years, I read a paper by Hebra, my master in Vienna, in which he discountenanced the too free application of water to the skin, and showed that it was those who bathed most who suffered the most from skin diseases. My own experience since then has taught me that the two free use of water to the skin does harm rather than good.

DR. C. C. RANSOM: Dr. Bulkley has perhaps overlooked the fact that the majority of the patients he sees are suffering from skin diseases. I do not think there is any real connection between frequent bathing and the production of skin diseases. The Turkish bath attendant is often in the bath for hours, and he usually has a beautiful skin. Weakness from bathing I believe is due to the fact that the bath is unwisely taken.

DR. W. DUFFIELD ROBINSON, of Philadelphia, read a paper on the

CLIMATOLOGY OF NUDITY,

dealing with the subjects of light, heat and atmosphere. The author noted the neglect of light in medical climatology and the tendency to lay stress much more largely on air. In a previous paper Dr. Robinson showed to the Association the penetration of various fabrics by light. The author introduced his subject by considering the physics of light, its absorption by the body. He suggested that the rash, the blood engorgement of the skin, in measles, scarlet fever and erysipelas is nature's effort toward securing light, energy and effective oxygen compounds in the blood in the greatest quantities. Dr. Robinson suggests that quinine in solution, as it must be in the blood, absorbs ultra violet and violet waves of light, and speedily emits them in colors, fluorescence, and asks: Can quinine, carrying light, thus bring death to the malarial plasmodium and destruction to its toxins? As bearing on the power of the nude human skin to absorb all kinds of light waves, the successful photographing has been reported in absolute darkness of a nude subject just after he has been very freely exposed to a copious bath of strong sunlight. Photographers have to keep glass intended for coating for negatives in absolute darkness for long periods to insure the escape of absorbed actinic waves. Lupus has been cured by concentrated sunlight. Dr. Robinson contended that the x-rays are not a form of light; that true burns cannot be produced by them and that they are not bactericidal.

DR. W. F. R. PHILLIPS, of the Weather Bureau: I believe that in the future study of climatology greater advances will be made in the study of light than in the study of barometrical pressure. The two factors which we should study carefully in connection with climatology are heat and light, those two forms of energy which our organism appreciates most keenly, and which it can be demonstrated are effective upon us. It seems strange that the effect of light upon the organism has not been noted earlier, because even in the very oldest physiologies the statement is made that animals in the light absorb much more oxygen than they do in the dark; that hibernating animals, even when taken out of their abode while asleep, would absorb more oxygen than before they were taken out. Experiments upon human beings have shown the same thing. In the early seventies, when the fact was brought out that light was a bactericidal agent, attention was also called to the fact that oxygen and ozone, which are powerful oxidizing agents, were perfectly powerless in the dark. They must be exposed to light; otherwise they are perfectly inert. The early experimenters were of the opinion that exposure to light did not alter the chemical composition of fluids in which germs might be growing, but I think subsequent investigators have proven very conclusively that the exposure of a culture medium to light does so profoundly alter an ordinary medium that the germ which occupies it is no longer able to be active.

DR. SOLLY: I am fully convinced of the value of light and its powerful influence in climate, and perhaps when one is considering the subject of high climate, it is one of the most important factors. Dr. Weber recognized this years ago, as well as many others. We must investigate these factors side by side, and we want to get facts about the different points, and not jump to the conclusion, because a man writes a paper on one part of a subject, that he means to limit his belief to that factor only, whether it be diminished barometic pressure, or heat, or light, or humidity, or what not. These factors are closely interwoven, and it is only by taking each one singly

[1] See No. 5, page 104 of the Journal.

that we can disentangle the meshes. I do not refer to the meshes to which Dr. Judd called our attention yesterday.

DR. WM. M. GIBSON, of Utica, presented a paper on

THE BEARING OF EMBOLISM ON THE COURSE OF VALVULAR HEART DISEASE.

After general consideration of mitral disease, cerebral and pulmonary embolism and venous thrombosis, the author cited a case of cystic kidney and accompanying inflammatory tissue having origin by embolism from endocardial inflammation; also a case of mitral regurgitation in which an area of skin on the left thigh and the outer surface of the right leg showed small infarctions and a low state of nutrition bordering on gangrene for weeks. The tax suddenly thrown on compensation by the occurrence of gangrene is very liable to produce extreme dilatation even if the patient rallies against the general effects of septicemia.

Dr. Gibson cited a case of mitral stenosis of long standing in which sudden gangrene of the right foot and leg developed after an attack of influenza and right lobar pneumonia. Amputation above the knee arrested the gangrene and the stump healed kindly; but a recurrence of pneumonia, probably embolic, proved too much for the patient's strength. An examination of the amputated leg disclosed an organized clot nearly two inches long at the bifurcation of the popliteal artery. Dr. Gibson also furnished the history of a remarkable case of embolism of the mesenteric artery following fracture of the humerus caused by a fall from a bicycle. The patient was a man seventy years old, who had had several attacks of acute rheumatism in a period of thirty years, but had escaped endocardial disease until the winter previous to his injury. An exploratory laparotomy revealed a gangrenous fold of intestine due to embolism, which had occurred with violent symptoms on the day following the injury. Death occurred on the third day.

DR. H. L. ELSNER, of Syracuse, read a paper on

THE CARDIAC ASTHENIA OF PNEUMONIA.

The author believes that too much attention has been directed to the heart alone, disregarding entirely the condition of the peripheral vessels, particularly the arteries. Taking up the various drugs the author believes that the indiscriminate use of nitroglycerin is a growing evil with the profession in this country, especially as applied in cases of pneumonia. The writer has seen patients treated with some of the numerous cardiac tonic tablets now found in profusion on the market, all of them containing digitalis with nitroglycerin and a variety of other so-called heart tonics, and exhibiting the most alarming cardiac and respiratory insufficiencies, with rapidly lowering arterial tension. Dr. Elsner cautioned against the use of veratrum viride, but advocated strychnia and digitalis.

Dr. Elsner's method consists in administering every fifteen minutes fifteen drops each of the compound spirit of ammonia, the compound spirit of lavender and the tincture of valerian. This is kept up day and night until the pulse shows improved tone and the heart action is decidedly better. Valerian may be omitted if not retained and whiskey or brandy substituted. Spartein sulphate in quarter-grain doses with four to six grains of caffein are given every two, three or four hours. Tokay wine was recommended. Dr. Elsner was doubtful about the value of oxygen and considered its usefulness as yet unsettled.

DR. WALKER: I have had such satisfactory results with nitroglycerin in pneumonia, first using it at the suggestion of Dr. Da Costa, that I wish to say a word in its defence. In my experience it has benefited these patients more than all the ammoniacal stimulants. I remember a very severe case of pneumonia which I saw about two years ago. The patient was a boy. I gave him one one-hundredth of a grain of nitroglycerin every two hours for at least two weeks with nothing but beneficial results. I recall another case, a lady who came to Philadelphia from Winchester. During her visit she developed pneumonia and her physician said she could not possibly recover. Under the use of nitroglycerin, however, the heart improved and the patient made a good recovery

I wish to mention another therapeutic agent which I have found of great service in cardiac asthenia, and that is dry cupping. My patients are dry cupped as long as the engorgement persists and whenever new pains occur.

DR. CURTIN: Nitroglycerin loses its effect in about three hours. In order to have a continuous effect, the dose should be repeated every two or three hours.

DR. JUDSON DALAND: I recently had an opportunity to make some experiments with digitalin on an individual who was in normal health, with the exception of a slight bronchitis. I increased the dose of digitalin (Merck's) until the patient was taking one-quarter of a grain every four hours, and the drug produced almost no effect.

DR. BABCOCK: I have no doubt that theoretically Dr. Elsner's treatment is successful and practically he has accomplished what he wished to. But we have all seen cases of pneumonia with paresis of the capillaries, in which nitroglycerin has been of the greatest benefit. It depends on the way in which it is used. As pointed out in the admirable paper of Dr. H. C. Wood about a year ago, nitroglycerin, in doses of one one-hundredth of a grain, placed on the tongue, is a very valuable heart stimulant, whereas larger doses will do harm. In larger does it is a cardiac paralyzant, while in small doses it indirectly stimulates the heart's action. In these cases of capillary paresis we have all seen the benefit of digitalis, strychnia and nitroglycerin, but not until the latter has been added.

DR. JACOBI: Digitalin, which I first tried many years ago, I regard as a useless product.

DR. ELSNER: I expected, in presenting this paper, to meet with adherents of the nitroglycerin treatment. I dare say that in the majority of the cases which are cited the nitroglycerin was given in connection with other remedies which we know are effective heart stimulants, that is, strychnia and digitalis.

DR. L. D. JUDD, of Philadelphia, presented a paper entitled

REMARKS BASED UPON A FURTHER EXPERIENCE OF THE USE OF CALOMEL IN DIPHTHERIA.

DR. HAROLD WILLIAMS, of Boston, read a paper entitled

THE EFFECTS OF VIOLENT AND PROLONGED MUSCULAR EXERCISE UPON THE HEART.

His paper consists of the report of examinations held upon long-distance runners and of a study based thereon of the effects of such violent and prolonged exercise upon the heart. The paper includes preliminary studies made upon athletes immediately before and after long practice runs, and a detailed study of

the results of an examination recently held upon Marathon runners. In this examination records were made of the weight, pulse, temperature, respirations, urine and heart, before and after the race. The significance of heart murmurs heard in the second left intercostal space and their diagnostic value are discussed at some length. The conclusions arrived at are: The fallacy of general statements made in regard to the effects of exercise upon the heart; the importance that every heart and every form of exercise should receive special consideration; and that the effect upon the heart of such long-distance running as is described in the paper is chiefly to be regarded as a participation of the muscular stricture of the left ventricle and its muscular mitral valve in the resulting general muscular exhaustion.

One of the runners in this contest presented some very interesting features. After a practice run of five miles he showed a temperature of 98°, pulse 100, respiration 32, a faint trace of albumin and a sphygmographic tracing of high arterial tension. After the twenty-five-mile race he showed a loss of 4.9° in temperature and four and a half pounds in weight, respiration 24, one tenth per cent. of albumin with numerous casts, and a pulse of 104 and of exceedingly low tension. All the runners showed an extreme condition of general muscular exhaustion. A significant fact was that those who won first and second place had no murmurs, while others had murmurs after the race. The greater the muscular vigor the less the liability to murmur.

DR. JOHN C. MUNRO, of Boston, read a paper on

EMPYEMA FROM A SURGICAL STANDPOINT.

In the first place, he advocated the use of ether as an anesthetic, although he used chloroform in double empyema in children where struggling and coughing must be reduced to a minimum. The author has had delayed expansion or incomplete permanent expansion in both pneumococcic and streptococcic empyemata, but where the operation has been done soon after the formation of pus immediate expansion has taken place in both types, although, as a rule, complete expansion is more likely to be slower in the pneumococcic cases, that is, full resonance is not noted before several weeks. The deaths in Dr. Munro's cases have come from embolus from hearts displaced by a left pleural cavity filled with pus; from a relapse or an extension of a pneumonia, and in the streptococcic cases from a rapid general infection. The latter cases are occasionally so rapidly fatal that no matter how early the cavity is emptied nothing is of avail.

DR. V. Y. BOWDITCH: I agree with the reader of the paper so thoroughly that I have little or nothing to add. It has always been my custom to refer the case to a surgeon for operation at once if pus is found in the pleural cavity, unless it be a case of pyopneumothorax in conjunction with advanced phthisis, in which case I question whether a permanent opening is advisable from the fact that it is merely an additional source of discomfort to a hopelessly ill patient and occasional aspiration may be sufficient to relieve urgent symptoms. With regard to the use of the pneumatic cabinet, I have had no experience with it in empyema, but it suggests itself as a valuable adjunct in the expansion of the lung. I should like to hear from those who differ from Dr. Munro about the advisability of immediately operating when pus is found.

DR. HAROLD WILLIAMS suggested that perhaps the unfavorable results which have been reported were due to the manner in which the anesthetic was given rather than to the anesthetic itself.

DR. HOWARD S. ANDERS read a paper on

THE RELATION OF LOCAL METEOROLOGICAL CONDITIONS TO THE INFLUENZA EPIDEMIC IN PHILADELPHIA IN THE WINTER OF 1898–1899.

He has made a careful study of the atmospheric pressure, mean monthly temperature, maxima and minima, the mean daily range and mean variability, the relative humidity, the precipitation, the prevailing direction, total movement and velocity of the wind and the general weather conditions during the months of October, November, December and January for the years 1895 to 1899 inclusive. Dr. Anders shows that during November and December, 1898, there were several volleys of attack, as it were, in which influenza suddenly overcame numbers of people for three or four days or a week and then seemed to subside to a degree to be followed by other exacerbations and remissions of invasion; these attacking periods were invariably preceded by sudden thaws, thick ill-smelling fogs and relatively warm, moist and calm weather; they were apparently introduced by cold, clear, dry and windy weather. These changes appeared to be unusually sudden, extreme, frequent and rapid. Fogs were noted. The conclusions are still uncertain.

DR. GUY HISNDALE, of Philadelphia, read a paper on

THE COLD WAVE OF FEBRUARY.

After tracing the meteorological conditions leading up to this cold wave, which was a continuation of three distinct waves, he showed the effect on the community in the loss of life by which 104 persons perished between January 29th and February 13th. Twenty-four of these died in Colorado by freezing and by avalanche; in Texas 15; in Pennsylvania 11, and in New York 10. The hardships from scant food and fuel supply were more widespread than in any other cold wave of which we have records in this country.

The new record established for Washington was — 15°, — 7° at Baltimore and — 6° for Philadelphia.

The snowfall in Philadelphia began on February 11th at 9 P. M., and continued until the 14th at 1 A. M., during which time 18.60 inches fell. The wind was from the northeast and blew at times at the rate of sixty miles an hour. The lowest barometer was 29.92 inches. The estimated monetary loss in Philadelphia was $2,500,000, and in the country at large $20,000,000. Food rose in price and there was a shortage in meat, coal, milk, fresh vegetables, oysters, fish and flour. The financial loss was incalculable.

One of the most remarkable phenomena was the flow of ice down the Mississippi River on the 17th of February past New Orleans and into the Gulf of Mexico, an event never before witnessed during the memory of man. Ice an inch thick formed at the mouth of the Mississippi, in East and Garden Island Bays and the temperature fell to 10° on the 13th. Another phenomenon was the fall of snow at Jacksonville, Florida.

DR. R. G. CURTIN, of Philadelphia, read a paper on

CARDIO-ESOPHAGEAL GUSH AND CLICK SIMULATING A HEART MURMUR.

The author believes them to be extrapericardial, esophageal. They are synchronous with the action of the heart and as far as the author knows, not heretofore described. In one case the sound was more distinctly heard when the ear was held in front of the open mouth than when applied to the chest. It sounded like a short gush of air from the throat modified by the upper air passages giving it a low-pitched, grunting sound. The sound continued while the patient was talking and breathing. In some of the other cases the sound could be heard across the room or further.

DR. E. O. OTIS, of Boston, read a paper entitled

NOTES ON TUBERCULIN TEST.

DR. LANGMAID: In the early days of tuberculin I saw a striking example of the injurious effects following its injection. Unknown to me, five or six patients in my service at the Massachusetts General Hospital were injected with the remedy, and shortly afterwards in passing through the ward, I noticed that something was amiss with the larynges of those patients. I had never before seen a larynx in such a terrible condition. My assistant then informed me that he had been induced to allow the injection of tuberculin to be made in a number of my patients. I therefore immediately forbade its further use in my clinic. Since then, of course, the tuberculin has been much modified.

I would like to ask Dr. Otis what the outcome was in the cases of cervical adentitis in which the tuberculin was used? Did the patients show any subsequent evidences of tuberculosis in the bones or in any other tissues of the body? Suppose he does get the evidences of tuberculosis in these cases of cervical adenitis, what does he expect the future course of such patients will be? What will be the outcome of these tubercular patients?

DR. OTIS: The primary object of this series of observations was in order to determine, if possible, what proportion of cases of enlarged glands in the neck were tuberculous in character. The only one I could find who had investigated this subject was Valland, and his evidence seemed to me unsatisfactory. The result of the injections in the various cases indicated in a measure the treatment. Valland and others are of the opinion that tuberculosis which manifests itself at first as a cervical adentitis frequently goes on to pulmonary tuberculosis.

The injections were made principally on hospital patients and were not objected to and no bad results followed.

QUININE IN THE UNITED STATES ARMY. — We learn from the *Medical News* that more than 125,000,000 grains of quinine have been taken by United States soldiers during the past year. It is said that some of the military patients in the army hospitals in Cuba and Puerto Rico took as much as 300 grains a week during several weeks. Hardly any of those who were in service in the West India Islands failed to take some quinine during their stay. A military correspondent writing from Puerto Rico recently said that practically none of the soldiers had been entirely exempt from malarial disturbances on that island and that while the malaria was usually not severe it was very obstinate.

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PROPHYLAXIS AGAINST SMALL-POX.

WITH the continued prevalence of sporadic cases of small-pox, particularly in view of approaching colder weather, it would seem that every possible measure should be taken to prevent its spread. The power to accomplish this end lies largely with the boards of health of the several States, who should certainly have the warmest support of the people at large. That such support is usually lukewarm until actual danger threatens we know too well, but the importance of the matter evidently demands that all legitimate means should be taken to instruct the people, without alarming them unduly, in regard to the nature of the disease and methods of its prevention, beyond the mere fact of vaccination.

We are glad to call attention, in this connection, to an excellent circular printed and distributed by the State Board of Health of Indiana, which is calculated to do much good in the way of educating the masses of the people in matters about which they are more than likely to gain erroneous opinions from the daily press. The circular of four rather finely printed pages is addressed to the people of Indiana, and is headed "Small-pox and its Prevention." The language is direct and simple and calculated to attract the attention of any one into whose hands it may come. It is stated that the disease has already appeared in twenty-six counties of the State, with a total number of nearly three hundred cases, of which, however, only four have thus far been fatal. The fear is expressed that with the coming of cold weather the disease will assume a more virulent form, and vaccination is urged before this possibility becomes a fact. The circular then goes on to state that if properly done there is no danger in vaccination, and describes briefly the process of vaccination, and the nature of the lesion resulting when it is successful, with the general causes of sepsis from careless after-treatment. All this seems to us an admirable method of winning the confidence of those who need vaccination, and whose minds are sure to be distorted by the folly of the antivaccination fanatics.

Following this is a statement as to the differential diagnosis of small-pox, warning against the possibility of mistaking it for chicken-pox. The lesions are described in perfectly simple language and their peculiarities insisted upon, with the added warning that it is safer to err on the side of over-caution in a matter of so much importance to the health of the community.

The remainder of the circular is taken up with directions regarding isolation, care of the sick-room, disinfection and, finally, by an address, put in concise form, to the public by the Indiana State Medical Society, upon the prevention of tuberculosis and small-pox. Regarding small-pox, the Society makes the following appeal:

"That the ordinary sanitary measures thoroughly applied, though of the highest value and by no means to be neglected, have nevertheless not proven sufficient to control the spread of small-pox; that in vaccination and revaccination accurately and thoroughly applied there is an almost absolute preventive of small-pox; that though with the lapse of years after successful vaccination the protective influence may decline and small-pox may be contracted, the disease is robbed of most of its dangers; that properly applied, in the hands and throughout under the direction of competent physicians, vaccination is attended with but insignificant risks, the disease-preventing and death-preventing effects vastly outweighing such risks; that upon the basis of these convictions, the State Medical Society does invite and urge the public to a full confidence in the preventive value of vaccination against small-pox, and does urge the public to relax in no direction its vigilance in the carrying out of this disease-preventing and life-saving measure."

This action of the Indiana Board of Health should be followed by other States in which small-pox has appeared or is threatened. There can be no question that the disease is propagated through the ignorance of the people, and sometimes, let us add, of physicians, as to the nature and physical appearances of the affection. Our own experience in Massachusetts bears this out. Not infrequently during the last few months cases have been discovered relatively late in the course of the disease, after affording ample opportunity for its transmission to others. This danger is enhanced by the mildness of the affection, as recently manifested.

Since this is so, and since for various reasons cases are apt to go unrecognized and thereby become a menace to others, it is the part of policy for those in authority to disseminate knowledge which will tend to minimize this danger. By this means it is probable that a much more ready recognition of the disease would be attained, inasmuch as the people would tend to become interested and to co-operate more fully with the appointed guardians of the public health than is at present the case. We hope that other States will see fit to follow in the footsteps of Indiana, for in the case of small-pox public education means a more successful prophylaxis than is likely to be attained by law and compulsion.

AN ARMY SANITARIUM FOR TUBERCULOSIS.

By direction of the Secretary of War, the Surgeon-General of the Army has recently been authorized to establish a general hospital at Fort Bayard, N. M., as a sanitarium for the treatment of officers and enlisted men of the army suffering from pulmonary tuberculosis, and hereafter transfers of enlisted men suffering from that disease may be made to the new hospital upon the recommendation of medical officers of the army. Orders have been issued to the quartermaster's department to put in a good state of repair such buildings at Fort Bayard as the surgeon-general may designate as necessary for the establishment of the hospital. The surgeon-general is also authorized to provide for the care and treatment of discharged soldiers entitled to the benefits of the United States Soldiers' Home, Washington, D. C, who may be sent to the sanitarium by the Board of Commissioners of the home. The expenses for the maintenance of such discharged soldiers will be paid from the funds of that institution.

The establishment of this sanitarium is the logical outcome of the practice which has prevailed since 1892 of transferring soldiers in the early stages of phthisis to the various military stations in Arizona, New Mexico and Southern California, in order to give them the advantage of a more favorable climate. While no large number has been so transferred, the results have been sufficiently favorable to warrant the action just taken — about twenty per cent. of such transfers having been followed by recovery, while the progress of the disease has been arrested in a large proportion of cases. Heretofore, these phthisical individuals were scattered among the posts of Apache, Huachuca, Grant, Bayard and the barracks at San Diego, and their treatment was merely incidental to the routine hospital work at these stations. This practice presented obvious disadvantages, both to the patient and those with whom he was placed in contact, and it is believed that under the new system considerably more favorable results may be anticipated. It will be remembered that the abandoned military reservation of Fort Stanton, N. M., was a few months since transferred to the Interior Department for use by the Marine-Hospital Service in the treatment of consumption, and it seems rather unfortunate that these two sanitaria, only a short distance apart, could not be combined into one large establishment, instead of being maintained as separate institutions. At present the navy, in which a high proportion of pulmonary tuberculosis necessarily exists, has no place for the reception and scientific treatment of the incipient consumptive, nor has its enlisted force the numerical strength to warrant the establishment of a third institution of this character to meet its particular needs. It would seem, therefore, as if both reason and economy demanded a single large Government sanitarium, modelled on the plan so successful in its workings at the Army and Navy General Hospital

at Hot Springs, Ark., where are admitted the officers, cadets and enlisted men of the military and naval service, the officers of the Revenue-Cutter Service and Marine-Hospital Service and the honorably discharged soldiers and sailors of the regular and volunteer army and navy. This hospital has been ably administered and well patronized, and shows that there need be no disadvantage or official friction where patients are derived from various sources. A favorable climate is recognized as the most powerful factor in inducing recovery in tuberculosis, and provision should be made by which all classes entitled to receive medical attendance from the Government should be equally favored in this respect. The multiplication of establishments for this purpose is needlessly expensive, and if consolidated under one head, preferably a medical officer of the army trained for the position by previous command of one of the immense military hospitals which have been in constant operation since the outbreak of the war with Spain, their capacity for good would be increased and an excellent administration assured.

A SIGN OF PROGRESS.

It will be remembered that a few years ago Dr. Weir Mitchell published a vigorous protest against the lack of productiveness in research work of large institutions, chiefly of those devoted to the care of the insane. He pointed out that in spite of the best possible opportunity, practically nothing had been accomplished up to the time at which he wrote. The suggestions made by Dr. Mitchell were not all graciously received, but they undoubtedly had a certain effect, as unpleasant suggestions are apt to, in arousing men engaged in institution work to a renewed sense of their possibilities. In any case, whatever the reason may have been, it takes no very critical eye to see that a change of far-reaching character has been introduced and is becoming more and more evident each year. This has been demonstrated in several ways. First and most important, by the appointment of trained men to positions in institutions at which patients remain for long periods of time. It is being clearly recognized that the duties of institution physicians are much broader than is implied in the mere physical care of those entrusted to them. If the hospital completely fulfils its function, the patients must be studied by those who have ample time and training for such study, and this should be continued into the post-mortem room and laboratory. As a result of this growing feeling pathologists have been appointed, and with these appointments the whole spirit of institution life has changed. They have developed, in many cases, into prolific fields of research, to the lasting benefit of the patient, as well as to the cause of science. In other words, institutions have become hospitals and not merely asylums, a term which we find everywhere, and rightly, falling into disuse.

With the development of the spirit of research has naturally and inevitably come the growth of the laboratory, as a necessary adjunct to all well-regulated hospitals. Apart from the individual laboratories which now exist in nearly all of our institutions, we have, within the last few years, seen a plan take root and grow in New York City, under the direction of Dr. Ira Van Gieson, which is without doubt destined to prove of incalculable value to the development of investigation in the insane hospitals of New York State and of the whole country. We refer, of course, to the Pathological Institute of the New York State Hospitals. In this we have a central station, to which members of hospital staffs may come to learn methods, and from which they go to carry out work in the several institutions to which they may belong, the associates of the laboratory itself meanwhile devoting themselves particularly to the various problems which psychiatry and allied sciences present.

As a natural consequence of this new enthusiasm, the need has grown for a means of publication of the results of research. This has led, on the part of New York State, to the publication of the *Archives of Neurology and Psychopathology*, an admirably edited and printed quarterly, to which we have previously had occasion to refer in these columns. Individual institutions are following this example, and we may expect to see a constantly growing number of such publications as time goes on. For example, as we write, we have before us a volume of 236 pages, done in the very best style of the bookmaker's art, entitled "The Bulletin of the Ohio Hospital for Epileptics," and edited by Dr. A. P. Ohlmacher, who is also the chief contributor. In it Dr. Ohlmacher presents the results of his researches on the pathology of epilepsy, a paper of much importance, with various collateral matters of more than usual interest. The only regret is that such an admirable publication should not have a wider circulation.

We regard it as a most hopeful sign of the times that opportunities are now everywhere being grasped, that valuable material is being used, instead of being almost universally neglected, as was the case not many years ago. We are gradually learning the lesson that the institution which deals with more or less fixed patients suffering often from chronic disease is the place of all others for the investigation of some of the most subtle and important problems of medicine. Dr. Mitchell's protest could not have been uttered at the present time, true as it may have been when he wrote, for now some of our very best work is coming from the institutions he was holding up to criticism, and more is sure to follow. This fact certainly marks a significant step in advance.

MEDICAL NOTES.

Danger of Epidemics in Porto Rico. — Owing to the appalling loss of life from the storm in Porto Rico, the sanitary condition of the island is thought to

be in a dangerous state and a serious epidemic of disease is feared.

A NEW BUILDING FOR MCGILL UNIVERSITY. — We learn from *Science* that McGill University proposes to erect at the cost of $70,000 a building for its departments of hygiene, pharmacology and medical jurisprudence. In the medical department of this university Dr. T. W. Burgess has been appointed professor of mental diseases.

YELLOW FEVER IN FLORIDA. — It is reported that between twenty-five and thirty cases of yellow fever have occurred at Key West, though not in a virulent form. A careful house-to-house canvass is being made and strict quarantine regulations established. It is probable that the number of cases is increasing, but the situation can no doubt be held in control.

INSANITY IN ENGLAND. — The recently issued annual report of the English Commissioners in Lunacy shows, according to the *Medical Record*, a great increase in insanity in England and Wales. On January 1st of the present year there were 105,086 persons adjudged insane, an increase of 3,114 over the previous year. The increase occurred among those of all social grades, being greatest, however, among paupers. It is thought a Government inquiry will be made into the causes of this increase.

THE NEW PATHOLOGICAL MUSEUM AT BERLIN. — The *Philadelphia Medical Journal* states that the completion of the magnificent new museum of pathological anatomy in connection with the Royal Charité Hospital may be regarded as one more triumph of its illustrious director, Professor Rudolph Virchow, and as significant of the wonderful strides that have been made in this branch of medical science at Berlin in the past as well as of the brilliant promise of the future.

MEDICAL STUDENTS IN THE SWISS UNIVERSITIES. — According to the *British Medical Journal*, the total number of students of medicine in the universities of Switzerland in the summer semester of 1899 is 1,153, of whom 344 are women; of these only 25 are Swiss. The students are distributed among the several universities as follows: Basel has 128, of whom 3 are women; Berne 247, of whom 87 are women; Geneva 277, of whom 90 are women; Lausanne 151, of whom 41 are women, and Zürich 350, of whom 123 are women.

BOSTON.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, September 6, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 45, scarlet fever 14, measles 1, typhoid fever 34.

THE BOSTON FLOATING HOSPITAL. — The trips of the Floating Hospital have been discontinued after a very successful season.

NEW YORK.

THE HEAVIEST PATIENT ON RECORD. — Perhaps the largest patient ever received at Bellevue Hospital was a trombone player, thirty-four years of age and weighing four hundred pounds, who was taken there on September 2d, suffering from hemiplegia. It required eight men to lift him from the ambulance, and in the ward to which he was taken two cots were lashed together and especially braced to sustain the man's weight.

GYMNASTICS IN THE VACATION SCHOOLS. — A pleasing feature of the winding up of the vacation schools was the first annual gymnastic tournament of the pupils of the public playgrounds and open-air gymnasiums maintained by the Board of Education, which was held at Crotona Park, in the Borough of the Bronx, on September 1st. This is an entirely new branch of public-school work, and the exhibition attracted much interest. There were entered thirty-two teams of ten boys each, who did work on the vaulting bar, parallel bars, combination ladder, and tumbling mats. There were also some boxing and wrestling matches.

A FAMILY TREATED FOR RABIES. — A whole family, consisting of father and mother, and three children, who were recently bitten by a pet dog, believed to be suffering from rabies, at their home in Hamesford, Ontario, has been received at the New York Pasteur Institute for treatment.

ARMY NOTES.

EUCALYPTUS AND MALARIA. — Investigations, under orders from General Brooke, have been instituted in Cuba with reference to the eucalyptus globulus as an antimalarial agent. This tree, which is largely planted in the Roman Campagna and by the French in Algeria, is said to have rendered former malarial districts much less unhealthful. The city of Mexico is cited as another instance, where the Vigo Canal, the floating gardens and other malarial districts are now well stocked with young trees, with the result that places which were once marshy and unhealthful have been rendered dry and salubrious. General Wood is reported to have strongly endorsed a requisition for these trees for Santiago.

INCREASE OF HOSPITAL FACILITIES IN THE PHILIPPINES. — The chief surgeon at Manila has been directed to take immediate steps looking to the enlargement of hospital facilities in the Philippines to conform to the increased force of 63,000 men which it is expected will be available for duty in December. As the time required for the erection of large frame hospitals, such as were erected in this country at Hampton, Savannah and San Francisco, is at least six months, it will be necessary to depend upon buildings already constructed, supplemented by tent hospitals. For the latter purpose 500 hospital tents, in addition to those already in Manila, have recently

been forwarded, and the chief surgeon has been instructed to have these hospitals in readiness prior to the arrival of the newly raised volunteer troops from the United States.

AN ARMY MEDICAL EXAMINATION AT MANILA. — Recent orders constitute the medical officers on board the hospital ship *Missouri* into an examining board, for the purpose of passing upon the merits of candidates for commissions in the medical corps now serving in the Philippines. At the last examination, held during the past winter, the medical men serving in the *Orient* were debarred by distance from appearing as candidates. There are now several existing and anticipated vacancies in the corps and these Surgeon-General Sternberg has justly decided should be filled from the score or more applicants who have rendered such valuable service at the front. The examining board is directed to convene as soon as Manila is reached.

MOVEMENTS OF THE ARMY HOSPITAL SHIPS. — The army hospital ships *Relief* and *Missouri*, now at San Francisco and New York respectively, will leave for Manila about the end of August. The *Relief* carries a full load of medical stores and a detachment of twenty female nurses. The *Missouri*, now being refitted for the trip, will sail *via* Suez, carrying a large amount of medical supplies, a number of medical officers and a detachment of the hospital corps, numbering one hundred and fifty men.

ILLEGITIMACY IN THE BRITISH WEST INDIES. — The report of the registrar-general for the island of Jamaica, for the year 1898, deplores the falling of in marriages among the poorer classes, the rate per 1,000 population having undergone a steady annual decrease from 5.5 per 1,000 in 1891 to 3.7 in 1898. This is a discouraging indication of the social conditions on the island but is consistent with the high and increasing rate of illegitimacy, since of the 28,447 births no less than 17,729 — or 62.3 per cent. — occurred out of wedlock. In 1897 the proportion of illegitimacy was 61.1 per cent., this figure being much above the average for the preceding decade. The proportion of deaths of legitimate and illegitimate children under one year old to each 100 births of same was 13.87 for the former and 20.08 for the latter. The report compares the illegitimacy in Jamaica with that of the other British West Indian colonies, using the latest statistics, showing the rate of illegitimate births per 100 births as follows: British Guiana, 72.6; Dominica, 69.5; Antigua, 68.5; Jamaica, 62,3; St. Lucia, 59.38; Trinidad, 58.1; St. Vincent, 56.4; Grenada, 49.63; British Honduras, 36.73; Bermuda, 13.2. In Jamaica the blacks outnumber the whites in the proportion of 44 to 1, and are said to be largely relapsing into the semi-barbarous state prevailing among the blacks of San Domingo and Haiti. The low amount of illegitimacy in Bermuda corresponds with the unusually small proportion of venereal disease noted among the British troops on that station.

A RECENT MEDICAL REQUISITION. — An idea may be obtained of the magnitude of the work of the medical department in the Philippines from a requisition for medical supplies made by the chief surgeon of the troops now serving in those islands. The requisition, recently received and filled, included 40 items, among them being 10,000,000 quinine tablets; 7,500,000 grains of quinine in bulk; 20 tons of epsom salts; 5,000 bottles of paregoric; 3,000 bottles of iodoform; 8,000 bottles of collodion; 5,000 bottles of chloroform; 2,500 tins of ether; 10,000 quarts of whiskey and 7,000 quarts of alcohol. There were also 600,000 compound cathartic pills; 1,000,000 tablets of strychnine; 1,600,000 tablets of salicylate of soda; 12,000 yards of mustard plasters; 3,000 yards of adhesive plaster; 50,000 yards of plain gauze; 5,000 yards of unbleached muslin; 50,000 sterilized bandages; 96,000 roller bandages and 4,000 pounds of absorbent cotton. The order also included 5,000 pieces of each kind of crockery and cutlery necessary to equip hospital mess tables.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 26, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	—	—	—	—	—	—	—
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	538,463	219	96	18.26	9.66	12.42	1.84	.46
Baltimore	506,389	187	74	30.21	4.77	23.32	3.01	2.65
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	114	36	30.80	11.44	11.44	12.32	4.40
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	25	—	72.00	36.00	64.00	—	—
Nashville	87,754	45	22	20.00	13.00	15.55	2.22	2.22
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	39	21	51.20	2.56	43.52	—	5.12
Fall River	25,919	50	28	52.00	8.00	52.00	—	—
Cambridge	99,724	33	17	33.33	3.03	24.24	3.03	—
Lowell	88,641	28	15	46.41	17.85	42.84	—	—
Lynn	66,763	—	—	—	—	—	—	—
New Bedford	68,340	20	9	35.00	5.00	35.00	—	—
Somerville	68,101	21	7	23.80	4.76	23.80	—	—
Lawrence	57,263	26	12	22.10	22.10	19.25	—	3.85
Springfield	56,501	14	4	35.70	—	21.42	7.14	—
Holyoke	43,424	17	11	58.80	5.88	52.92	—	—
Brockton	37,278	6	4	33.33	—	33.33	—	—
Salem	36,883	17	10	35.28	—	23.52	5.88	5.88
Malden	34,513	3	—	—	—	—	—	—
Chelsea	33,468	10	2	10.00	—	—	10.00	—
Haverhill	32,022	7	1	14.28	14.28	14.28	—	—
Gloucester	30,589	11	6	—	—	—	—	—
Newton	29,716	5	3	20.00	—	20.00	—	—
Fitchburg	29,438	10	6	30.00	10 00	20.00	10.00	—
Taunton	28,167	14	3	21.42	7.14	21.42	—	—
Everett	25,338	4	4	50.00	—	25.00	—	—
Quincy	23,549	9	6	66.66	11.11	66.66	—	—
Pittsfield	27,643	5	1	—	—	—	—	—
Waltham	22,296	6	2	33.33	—	—	16.66	—
North Adams	20,971	2	2	—	—	—	—	—
Chicopee	17,842	8	2	12.50	12.50	12.50	—	—
Medford	16,511	6	2	—	16.66	—	—	—
Newburyport	14,915	5	3	60.00	—	60.00	—	—
Melrose	14,032	2	—	—	—	—	—	—

Deaths reported 981; under five years of age 407; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 301, consumption 86, acute lung diseases 45, diarrheal diseases 230, typhoid fever 32, diphtheria and croup 18, whooping-cough 8, cerebro-spinal meningitis 8, scarlet fever 3, small-pox 1.

From whooping-cough Boston 4, Washington and Providence 2 each. From cerebro-spinal meningitis Boston 3, Baltimore, Washington, Worcester, Holyoke and Waltham 1 each. From scarlet fever Boston, Lowell and New Bedford 1 each. From small-pox Boston 1.

METEOROLOGICAL RECORD

For the week ending August 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...20	29.81	76	81	70	81	84	82	S.W.	S.E.	3	1	O.	O.	
M...21	29.87	68	73	63	80	100	90	N.E.	E.	3	12	O.	G.	1.41
T...22	29.89	66	69	63	95	96	96	S.E.	S.E.	5	4	O.	F.	.01
W...23	29.96	68	69	64	96	92	94	N.E.	N.E.	4	5	O.	O.	
T...24	30.01	64	65	62	97	98	98	N.E.	N.	14	9	O.	O.	.02
F...25	30.04	66	70	63	85	90	88	E.	S.E.	5	5	O.	C.	
S...26	30.15	65	70	60	80	70	75	N.E.	E.	12	2	O.	C.	

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 2, 1899.

E. R. STITT, passed assistant surgeon, detached from the Bureau of Medicine and Surgery, September 25th, and ordered to the "Hartford."

W. M. GARTON, assistant surgeon, detached from the "Annapolis," when placed out of commission, and ordered to the Naval Academy. Order of August 28th modified: when detached from the "Annapolis" ordered to the Norfolk Navy Yard for duty on the "Franklin," instead of to the Naval Academy.

I. N. HURD, pharmacist, detached from treatment at the Naval Hospital, Mare Island, Cal., and granted sick leave for three months.

J. C. ROSENBLEUTH, passed assistant surgeon, detached from the "Nashville" and ordered to the Naval Hospital, Chelsea, Mass., for treatment.

M. S. GUEST, passed assistant surgeon, detached from the Boston Navy Yard and ordered to the "Wabash."

H. A. DUNN, assistant surgeon, detached from the Washington Navy Yard, September 2d, and ordered to the Port Royal Naval Station.

A. STUART, assistant surgeon detached from the Port Royal Naval Station, September 2d, and ordered to the "Yankton."

D. B. KERR, assistant surgeon, detached from the "Yankton" and ordered to the "Marietta" upon report of relief.

M. K. JOHNSON, assistant surgeon, detached from the "Marietta" and ordered to the "Nashville."

R. WAGGENER, pharmacist, ordered to the Army and Navy General Hospital, Hot Springs, Ark., for treatment.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING AUGUST 24, 1899.

CARMICHAEL, D. A., surgeon. Granted leave of absence for thirty days. August 23, 1899.

WASDIN, EUGENE, surgeon. To proceed to Marshall, Va., on special temporary duty. August 18, 1899. Detailed as delegate to the International Medical Congress to meet at Brussels, Belgium, September 4, 1899. August 21, 1899.

PETTUS, W. J., surgeon. Granted leave of absence for one day. August 19, 1899.

STIMPSON, W. G., passed assistant surgeon. Granted leave of absence for thirty days from August 19, 1899. August 18, 1899.

OAKLEY, J. H., passed assistant surgeon. To proceed to Paducah, Ky., on special temporary duty. August 21. 1899.

WICKES, H. W., passed assistant surgeon. Granted leave of absence for ten days. August 23, 1899.

FRICKS, L. D., assistant surgeon. Detailed as inspector of unserviceable property at Norfolk, Va. August 21, 1899.

CAMINERO, H. S., acting assistant surgeon. Detailed as quarantine officer for the port of Guantanamo, Cuba. August 22, 1899.

RECENT DEATHS.

WILLIAM H. CAMMER, M.D., of Brooklyn, died on August 30th, after a brief illness. He was seventy-eight years old and was born in Madras, India. His medical studies, which were begun in London, were completed in Germany, and in 1848 he came to the United States. For sixteen years he was examining physician for the Immigration Commissioners at the old Castle Garden Station.

JAMES FERLEY, M.D., of Williamsburg, Borough of Brooklyn, died suddenly on August 30th, of cardiac disease. He was born in London, Eng., and was fifty-five years of age. At the time of his death he was chief of the Surgical Staff of St. Catherine's Hospital.

JOHN J. LINSON, M.D., died of cardiac disease at his home in Tarrytown, N. Y., on August 27th. He was born in New York City in 1837 and was a graduate of the College of Physicians and Surgeons. During the Civil War he served as surgeon of the 6th New York Heavy Artillery. He is credited with having invented the plan of marking men with nitrate of silver to prevent bounty jumping. For three years he was president of the Westchester County Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

Tetany, with Illustrative Case. By George W. Miles, A.M., M.D., Oneida, N. Y. Reprint. 1898.

Chemicolegal Testimony: Strychnin. By G. H. Meeker, M.S., Ph.D., Philadelphia Reprint. 1899.

A Review of Recent Legal Decisions affecting Physicians, Dentists, Druggists and the Public Health, together with a Brief for the Prosecution of Unlicensed Practitioners of Medicine, Dentistry or Pharmacy, with a paper upon Manslaughter, Christian Science and the Law, and Other Matter. By W. A. Purrington, of the New York Bar, Counsel of the Dental Society of State of New York, etc. New York: E. B. Treat & Co. 1899.

Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. Fourth edition, revised and enlarged. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; Member of the Association of American Physicians, etc. Illustrated with 205 engravings and 14 colored plates. Philadelphia and New York: Lea Brothers & Co. 1899.

On the Relation of the Nervous System to Disease and Disorder in the Viscera. Being the Morison Lectures delivered before the Royal College of Physicians in Edinburgh in 1897 and 1898. By Alexander Morison, M.D. (Edin.), Fellow of the College; Member of the Royal College of Physicians in London; Physician in Charge of Out-patients to the Great Northern Central Hospital and the Children's Hospital, Paddington Green, etc. Edinburgh and London: Young J. Pentland. 1899.

A Text-book of Mental Diseases, with Special Reference to the Pathological Aspects of Insanity. By W. Bevan Lewis, L.R.C.P. (Lond.), M.R.C.S. (Eng.), Medical Director, West Riding Asylum, Wakefield; Lecturer on Mental Diseases at the Yorkshire College; Examiner in Mental Diseases to Victoria University. Second edition, thoroughly revised, enlarged and in part rewritten, with illustrations in the text, charts and 26 lithographed plates. Philadelphia: P. Blakiston, Son & Co. 1899.

The Medical Complications, Accidents and Sequelæ of Typhoid or Enteric Fever. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, etc. With a special chapter on the Mental Disturbances following Typhoid Fever. By F. X. Dercum, M.D., Clinical Professor of Diseases of the Nervous System in the Jefferson Medical College. Philadelphia and New York: Lea Brothers & Co. 1899.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, etc. Volume I. March, 1899. Surgery of the Head, Neck and Chest; Diseases of Children; Pathology; Infectious Diseases, including Croupous Pneumonia; Laryngology and Rhinology; Otology. Philadelphia and New York: Lea Brothers & Co. 1899.

Pulmonary Tuberculosis: Its Modern Prophylaxis and the Treatment in Special Institutions and at Home. Alvarenga Prize Essay of the College of Physicians of Philadelphia for the year 1898. Revised and enlarged by S. A. Knopf, M.D., Paris and Bellevue Hospital, N. Y., Physician to the Lung Department of the New York Throat and Nose Hospital; formerly Assistant Physician to Professor Dettweiler, Falkenstein Sanatorium, Germany, etc. With descriptions and illustrations of the most important sanatoria of Europe, the United States and Canada. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

INTUSSUSCEPTION.[1]

BY JOHN C. MUNRO, M.D., BOSTON.

That intussusception is not rare is shown by the fact that over 500 cases have been reported within the last twenty-five years. According to Leichtenstein, 40 per cent. of all cases of intestinal obstruction are due to this lesion. Probably three-fourths of the cases occur in infants, though no age is exempt, even the fetus at full term not escaping. The lesion is due to the swallowing by one portion of the gut of its neighboring piece which has become constricted in consequence of a vigorous contraction of its circular fibres. According to Power, children are predisposed apparently on account of the greater length of the mesentery.

All cases should be considered, in the interest of the patient, to be surgical from the beginning. A strangulated hernia has long since ceased to be a medical disease; how much more should an internal strangulation with its similar possibilities be within reach of surgical interference if necessary. As in appendicitis, every case may not demand operation, but the responsibility should be placed in the hands of one who is ready and able to operate at the earliest opportunity.

Intussusception may be caused by sudden blows or injuries, muscular efforts, tumors of various kinds, typhoid or tubercular ulcerations, diarrhea and possibly vomiting and coughing.

The invagination is found in more than half of the cases in the ileocecal region, though other portions of the intestinal tract may be involved, Chiari and Engel each having seen a partial invagination in the stomach. The jejunum is comparatively rarely affected.

The symptoms in a typical case are sudden and acute abdominal pain, usually coming on at night, vomiting and stools containing mucus and blood. There may be diarrhea or obstipation. A tumor, not necessarily sausage-shaped, can be felt in the abdomen, generally on the right side, but until peritonitis has begun, spasm is absent or slight in degree. As the intestine becomes more and more constricted, congestion, stasis, infiltration and necrosis follow. Owing to the greater elasticity of the constricting ring as compared with the ring in external hernia, we are less liable, comparatively speaking, to find strangulation. Furthermore, the inner tubes being more liable to become gangrenous than the sheath, peritonitis may be escaped by the passage of the gangrenous portion along the digestive tract. But, in actual practice, it is not safe to rely on so slight an advantage, or to consider the condition less serious than it is, to wit, one of the most serious than can confront the surgeon.

Intussusception may be acute, chronic, chronic with acute exacerbations, single or multiple, direct or reversed.

Peritonitic adhesions may not form for weeks, or may begin with the onset of the invagination.

Spontaneous recovery may take place by disinvagination or by separation of the inner tube and evacuation later; in the latter way several feet of gut may be lost, one observer (Peacock) having seen eight pieces, aggregating twelve feet, passed during the course of three years. Disinvagination without any interference beyond medical treatment occasionally takes place, but such a fortunate outcome is rarely to be anticipated. Of spontaneous separation Rydygier says that it is very satisfactory but rare, "and to speculate on a chance accident is not an established therapeutic procedure." Many such cases die later of perforation, peritonitis, stricture, etc. According to Senn, young children and infants seldom, if ever, recover in this way.

Treatment by mechanical distention with liquids, air or gas may be successful if employed early, that is, within the first twenty-four or forty-eight hours at the utmost. In acute cases it is best given with full anesthesia and the patient inverted, all preparations for laparotomy in case of failure, necessity or doubt having been made. The pressure should be slight, not over two pounds if gas be used, or if a liquid, the reservoir should not be over two or three feet above the patient. A low intussusception may rarely be pushed back by a finger or tube passed into the rectum.

There is considerable shock from such a simple procedure, and many cases of rupture of the intestine during injection have been recorded. It is difficult to reduce the final inch of the invagination, and without actual inspection one cannot tell whether the reduction has been complete or not, so that the cases of recurring intussusception are probably due to the failure of complete disinvagination and not to a fresh, independent attack. Barker says that there is a tendency of the bowel to unroll itself *up to* the point at which it first began, but no farther; in other words, the supposed reduction is not a complete one, and abdominal palpation under such conditions may fail to show any tumor.

In brief, injection is justifiable in chronic cases; where the patient refuses operation in acute cases; when beyond surgical aid and within a few hours after the onset of the attack. If the first attempt in acute cases is not successful it is useless to make a second trial.

All authorities urge operation in one form or another, as early as possible in acute cases and at once after trying a simpler procedure, such as injection, for the same reason that one should be prepared to attack a hernia after failure to reduce it by taxis. In chronic cases it is unwise to delay over a week, simple attempts at reduction having been made meanwhile. The patient should be watched closely to forestall any acute attack. As in operating on the appendix in the interval, the risk of a laparotomy is reduced to its minimum.

After opening the abdomen there are various methods of dealing with the many conditions found. Of these we may consider artificial anus, enteroanastomosis, disinvagination or reduction, complete and partial resection.

Artificial anus has very little to recommend it. There is scarcely a recorded recovery in an acute case. Occasionally a chronic case has survived, and an acute case where a resection has followed the artificial anus which was resorted to to tide the patient along temporarily. As it does not relieve the strangulation or its consequences except the distention and

[1] Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

obstruction, it must be looked upon merely as a makeshift or an evidence of faintheartedness.

Entero-anastomosis has very little more to recommend it. The intestinal current is, to be sure, reestablished, but the invagination with all its possible and probable consequences still remains. A few cases, less than a dozen, of recovery in adults have been reported, most, if not all of them, being in chronic intussusception.

Disinvagination or reduction is the ideal operation, and if the case is seen early, before necrosis and firm adhesions have taken place, the outlook for its successful employment is good. Everything depends on the interference being early. Fifteen years ago Treves found that the mortality was only 30 per cent. in cases easily reduced, as against 91 per cent. in those reduced with difficulty, and since then, with the improvement in technique and diagnosis, the early operation shows a much lower death-rate.

Where the reduction is not easy on account of firm adhesions there is always a risk of tearing the bowel or of gangrene from the prolonged pressure, and in such suspicious cases it is safer to isolate or drain the area involved. Chronic cases are not necessarily difficult to reduce, even after weeks or months of invagination. In reducing, Senn advises that the edema be treated first as in a phimosis and then that countertraction be made below the apex in order to prevent folding, in the sheath and middle cylinders; occasionally insufflation will add materially in the manipulation. To prevent re-invagination if it appears liable to take place, he also suggest that the mesentery be shortened.

Where, owing to adhesions, tumors, necrosis or perforation, disinvagination is not possible, a resection in one form or another must be resorted to. Probably the simplest method is that devised by Maunsell or some modification similar to that described by Rydygier. The entering gut is sutured to the sheath at the neck without disturbing its position, and then through a longitudinal incision in the sheath the invagination is delivered and amputated near the neck, the free edges of the stump being sutured together, controlling in that way the mesenteric vessels. After dropping the stump back into place, the opening in the sheath is closed. If the invagination cannot be delivered through the side opening after amputation it may be left to come away later in the stools. Where possible a typical Maunsell operation may be done. In this way the least possible amount of intestine is sacrificed and the mesentery is quickly and easily controlled. The use of buttons or spools is unnecessary.

Where the sheath is gangrenous a complete excision is enforced, end-to-end or lateral anastomosis being employed. Here plates or buttons may be used if thought best. Occasionally it may be found that all of the intussusceptum and a portion only of the sheath may be removed. If the intussusception is low down resection may at times be done through the rectum without opening the abdomen.

As, for the most part, all data and methods are based on intussusception in the child and in the ileocecal portion of the intestine, it may be well, in view of the two personal cases reported to-day, to consider, in more detail, invagination in adults and especially when it takes place in the jejunum.

Adding to Braun's table made in 1885 and to Rydygier's table made in 1895 14 cases of reduction or resection in adults over sixteen years of age reported since, we have a group of 72 cases altogether. Undoubtedly there have been many more cases that have been operated upon, but so far as could be discovered no more have been recorded.

Of 21 recoveries after reduction — including the cases of Perceval (1888), Stretton (1894) and Barker (1897) — 13 were in the ileocecal or colic region, four were iliac, one jejunal and three unknown. Thirteen were chronic cases, seven acute, and one unknown.

Of 13 fatal reductions — including the cases of Davies-Colley, White (1889), Richardson (1892) — nine were ileocolic, one each, iliac and jejunal, and two unknown. Seven were acute and six were chronic, probably some of the latter being operated upon during an acute exacerbation. Shock and peritonitis were the main causes of fatal issue.

Of 17 recoveries after resection — including the cases of Hartley (1892), Wassiljew and Munro (1898) — 14 were ileocolic and one each was iliac, colic and jejunal. Six were acute or chronic with acute exacerbations, and nine were chronic, while two were unknown. In two cases (Mikulicz and Wassiljew) the resection was secondary to an artificial anus.

Of 21 fatal resections — including the cases of Abbe (1891), Senn, Robson and Munro (1897) — nine were ileocolic, seven iliac, one colic, two jejunal and two unknown. Fourteen were acute or chronic with acute exacerbations, five were chronic and two unknown. One (Esmarch) was secondary to artificial anus. Nearly all died of peritonitis or shock.

The jejunum was involved in only five of these cases:

(1) White's case, an acute invagination ten inches long and two and one-half feet from the pylorus, died on the table, the operation being abandoned.

(2) Stutsgaard's case, caused by a lipoma and of unknown duration, died in five days of peritonitis after resection of 128 centimetres.

(3) Robson's case, of seven days' duration, died after resection of four feet and an end-to-end anastomosis.

(4) Borch's case of acute ileojejunal invagination recovered after disinvagination.

(5) Writer's case of recovery after resection of thirty-two inches of jejunum.

The earlier cases, like those reported by Velse, Fuchsius and others at the beginning of the present century were naturally cases of reduction, many of them being easily replaced. When in recent years resection began to be employed it was at first almost uniformly fatal, but with the improvement in technique the mortality has fallen nearly one-half, and in all probability it will never be much less because, with earlier diagnosis and operation, resection will be replaced by reduction, leaving only the desperate and neglected cases for the more serious operation.

Where the lesion involves the upper portion of the intestine any procedure must of necessity be fraught with more danger than in the cases in which the lower part of the tract is involved, but fortunately the latter region is far more frequently affected, so that with early surgical supervision and early interference in both acute and chronic cases after a judicious trial of simpler, non-operative means, many more patients should be saved. It remains in the

hands of the general practitioner to realize the grave possibilities in all cases and to protect himself and his patients by early resort to the surgeon, who, on his part, must appreciate that death, just as in strangulated hernia or in acute appendicitis, is too often the price of a useless delay.

As a contribution to the statistics of operation for intussusception in adults, the writer will add two cases of his own. Both have been briefly reported in the Boston City Hospital Medical and Surgical Reports, Series X, but it may be allowed to give the history of one a little more in detail, the fatal one being dismissed in a few words.

Case I. Male, thirty-seven years old, was admitted to Dr. H. W. Cushing's service at the Boston City Hospital with a history of abdominal pain, obstipation, distention and tenderness in the region of the appendix for sixty hours. Operation under ether. Intussusception of the lower end of the ileum eight inches long and with beginning gangrene was found. Amputation proximally seven inches from the invagination and distally close to the cecum, or about one inch from the invagination, with end-to-end anastomosis, was made. Patient in poor condition at time of operation. On the following day he was still very ill and got out of bed against orders. Sixty hours after operation he died, a partial autopsy showing the abdomen to be full of feces from a rupture in the intestine on the proximal side of the joint, which was tight.

The history of the case of recovery after resection is as follows:

Case II. Chin Yuen, a Chinese laundryman, twenty-one years old, entered Dr. F. H. Williams's service at the Boston City Hospital, October 21, 1898, with a history of intermittent abdominal pain in right upper quadrant for three weeks. There was also an indefinite history of abdominal pain nine months previously, but as the patient talked very little English no definite connection between the two attacks could be obtained. Considerable nausea and vomiting. Bowels regular. Sleep poor on account of pain. During paroxysms he rolled about the bed moaning, and lay preferably on his belly. Pulse 90, regular and of good strength. Heart and lungs negative. A moderately lax, tympanitic abdomen, tender on deep pressure, more resistant on the right side, with increased localized resistance in the right hypochondrium. Two days later there was a leucocytosis of 13,500.

October 27th. No vomiting for five days; the face has lost the drawn expression and he no longer cries with pain. Better appetite and sleep.

October 31st (four days later). No abdominal pain since the 27th, bowels regular, general condition much improved and for several days he has been up and dressed ready for discharge, but two days afterward, on November 2d, he again had an attack of abdominal spasm and passed some blood at stool. Transferred to Dr. George W. Gay's service under the care of the writer. Examination without ether showed a tumor filling the pelvis and pushing the anterior wall of the rectum backwards, the tumor extending upwards along the right iliac fossa to the right hypochondrium. Spasm of the abdominal muscles. In view of his previous history it seemed best to delay in the hope that he would again quiet down enough to allow operation in the interval, but as the symptoms did not improve operation was performed on November 5th.

Operation under ether. — Incision three to four inches long at the outer edge of the rectus, exposing a sausage-shaped tumor extending from beneath the left lobe of the liver to deep in the pelvis, twelve to fourteen inches in length. Towards the lower end were three gangrenous areas that ruptured on handling, allowing pus and feces to escape. After clamping the bowel above and below the intussusception, the mesentery was cut parallel to the gut and the vessels controlled with a continuous half-hitch catgut suture, but owing to the abundant vascular supply additional ligatures were required. In order to gain a little room and to save as much of the bowel as possible the gut was disinvaginated for an inch or more at the neck, but after delivery the circulation was so poor that an additional inch was amputated. After suturing each stump-end with a continuous catgut suture to control the bleeding, an end-to-end anastomosis was made with two rows of a continuous, right-angle silk suture. Owing to the edema and swelling of the gut at the lower end, a good approximation was difficult, but so far as could be seen the joint was a tight one. The mesentery of the upper portion was bluish, and in one place had a small inflammatory patch, but there was apparently life enough to warrant its being retained. To have amputated more gut in order to exclude this bit of mesentery would have necessitated another parietal incision, which in the patient's condition was not justifiable at the time.

A half-pint of salt solution had been injected into the bowel before making the anastomosis; afterwards the abdominal cavity was washed out with hot salt solution, the lower three-quarters of the incision closed with silkworm gut, iodoform wicks and a glass drain being carried in at the upper angle and isolating the region of the joint from the general cavity.

The patient stood the operation, which lasted an hour, fairly well; the pulse at the close being 130 to 140, regular and of fair strength. Strychnia, salt solution and brandy had been given under the skin. Repeated one-quarter grain doses of calomel, and stimulation were ordered.

Good recovery from the operation followed, the bowels moving within twenty-four hours by enema, and broths being retained without vomiting.

November 7th. All wicks loosened and some removed under chloroform, the remainder being taken out two days later and replaced by a light packing.

November 11th. Intestinal contents, bile and pancreatic fluid escaped from the sinus to-day, but the general condition of the patient remains good. He was then put on rectal feeding, but as symptoms of starvation appeared a second operation was advised.

November 15th. *Operation under ether.* — At the bottom of the sinus a small opening into the bowel lay an inch and a half to the inside of the line of the parietal wound, so a second incision was made close to the median line. The opening into the gut, one-half inch in diameter, lay in the midst of gangrenous and granulation tissue. Considerable time was wasted in trying to close this hole, and then the incision was enlarged and the fresh adhesions broken down in order to allow access to the bowel. Owing to its adhesions and short mesentery it split open, not at the original anastomosis, but apparently in line with the

mesentery that was considered doubtful at the first operation. The patient's condition would not warrant prolonged operation, so the ends were sutured together with ordinary silk in mattress sutures passed deeply and at some distance from the edges. Apparently a tight joint was secured. Iodoform gauze drainage. There was considerable shock, but the patient recovered quickly and showed no evidence of peritoneal disturbance. The wicks were removed and he was gaining steadily, when, on the sixth day (November 21st), leakage from both wounds appeared. As the general condition continued satisfactory, a third operation was not undertaken until November 26th, when, under ether, a fine opening admitting a probe, at the bottom of the median incision, was found lying in firm, healthy tissue. This could be easily and completely closed with fine silk. The entire median wound was then thoroughly curetted, filled with strong permanganate solution and closed with silkworm-gut sutures, a small rubber-tissue drain being carried obliquely through the first lateral incision. No shock followed this operation.

Two days later, food, with pancreatic fluid and bile, appeared as of old, but the patient was in good condition, eating solid food and gaining steadily.

December 1st. Considerable digestion of the skin, controlled, at Dr. H. W. Cushing's suggestion, by dressing with tincture benzoin compound.

December 9th. General condition improving rapidly; lateral wound closed; apparently no pancreatic fluid, but a little pus from the sinus.

December 17th. Again a slight escape of pancreatic fluid and bile.

January 18th. The discharge continues about the same, the skin being completely protected by the benzoin.

January 25th. Three heavy silk loops (those used at the second anastomosis) discharged to-day. Patient in excellent condition.

February 4th. Lateral sinus, which reopened temporarily, has again closed.

February 18th. Patient cheerful and helpful about the ward.

March 17th. Discharge is now barely sufficient to moisten litmus paper, upon which it uniformly gives an acid reaction.

March 27th. Sinus healed. Patient fat and healthy.

April 11th. Wounds firmly closed; patient discharged wearing an abdominal swathe.

At the time of operation the intussusception, which was seen to be in the jejunum, was apparently a reversed one, but careful examination later showed that it was a direct invagination. The specimen, when measured after preservation in alcohol, showed that at least thirty-two inches had been excised.

It would have been better to have operated at the time the patient was ready to be discharged, or, at the latest, when the recurrence of the acute symptoms began, as in that way a partial excision might have been substituted for the complete one. No cause in the shape of a tumor or ulcerations could be found.

ANTHRAX EPIDEMIC. — A slight epidemic of anthrax, according to the *Journal of the American Medical Association*, has appeared among cattle in southern Chester County, Pa. The disease has also appeared in the region of Chambersburg, four cattle and two horses having died within the past few days.

THE GROWTH AND EXTENSION OF CARCINOMA.[1]

BY WILLIAM T. COUNCILMAN, M.D., BOSTON.

THE carcinoma is a tumor which arises from epithelial tissues and is characterized by unlimited growth locally and by the formation of tumors of a similar structure in other parts of the body. When we examine its microscopic structure we find that it is composed of two sorts of tissue: (1) epithelial cells arranged for the most part in solid masses, which vary in their size and form, growing in spaces which are called alveoli; (2) connective tissue which surrounds the alveoli and bears the blood-vessels for the nutrition of the cells in the alveoli. This connective tissue is called the stroma. Neither stroma nor blood-vessels penetrate the masses of epithelium. When we examine normal epithelial structures we find a very similar arrangement of tissues — epithelial cells growing in the closest juxtaposition with connective tissue, but never penetrated by it. Whether we consider covering epithelium or glandular epithelium, the arrangement of tissue is always the same.

If we take any normal epithelial structure and suppose that the cells at some point begin to multiply with unlimited activity and penetrate into the adjoining connective tissues, we have the structure of the carcinoma. It is not sufficient for the epithelium to proliferate. Epithelial tissues are the most active of any tissues of the body. Both the covering and the glandular epithelial cells are constantly becoming used up in the course of their physiological activity, and the loss is constantly repaired by the formation of new epithelial cells. This power of regeneration is sufficient not only for the ordinary wear and tear of the tissues, but extensive losses of cells are as easily repaired. Further, the epithelium may be excited to greater activity by various means, and large masses of tissue composed principally of epithelium may be produced. I say principally of epithelium, for, in consequence of a definite law of nutrition, when a tissue is growing actively and requires more food, the old blood-vessels will enlarge and new ones be formed. In consequence of this, along with the epithelial masses, considerable connective tissue with blood-vessels will be produced. An epithelial growth of this kind repeats the formation of the normal structures and is called typical. There is no penetration of the connective tissue by the growing masses of epithelium. There is no normal prototype for the structure of the carcinoma. We express this by saying that the simple hyperplasia we have been speaking of is typical, while the carcinoma is atypical.

When we compare the epithelium in the different epithelial structures of the body, we find differences in the size and form of the epithelial cells, and in their arrangement. These differences are to a certain extent apparent in the carcinomas which arise in different parts, and from the histological examination of the tumor we can say with considerable accuracy from what tissue it has arisen. To explain the growth of the carcinoma it will be necessary to consider for a moment the structure of the connective tissue. This is essentially formed of fibres, between which are cells. It carries the blood-vessels everywhere, and in it the lymphatics arise. In the tissue the cells lie in spaces,

[1] These remarks were illustrated by the projection of photo-micrographs. — Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

which communicate with adjoining spaces, and from the enlargement and coalescence of these spaces the lymphatics are formed. If we suppose that a carcinoma begins its formation by the epithelium growing outward into this tissue, then the growing cells of the tumor at once find their way into this system of communicating spaces and continue to grow in them. Every mass of epithelial cells is within such a lymph space of the tissue.

When we examine sections from the centre and periphery of a carcinoma we see certain differences in structures. In the periphery the cells stain more sharply and more of them show the peculiar changes in the nuclei by which we recognize cell division than do the cells in the centre. The same thing is seen more clearly when we make a section directly through a small carcinoma. The most active growth is in the periphery. In the centre the alveoli are small, the cells have degenerated, and in some cases have disappeared altogether. All the blood-vessels of a tumor enter from the periphery, and here the best nutrition is offered the cells. The atrophy which goes on in the centre is partly to be accounted for by the compression and occlusion of the vessels by the growing epithelial masses between which they must pass, and partly by the peripheral masses making more active demands for the nutriment which the vessels contain. The size of the single alveolus also has limits. The epithelial masses receive their nutrition also from the periphery because blood-vessels do not penetrate within them. In consequence, the cells on the outside proliferate and the newly-formed cells are pushed into the interior, and with the enlargement of the mass are further and further removed from the source of nutrition. As the alveolus enlarges, degeneration takes place in the central cells. Each alveolus then becomes in its growth a type of the whole tumor. The malnutrition of the centre of the tumor affects not only the epithelial alveoli but the connective-tissue stroma. It loses its characteristic structure, the fibres blend together into a dense mass, and the cells atrophy. It contracts just as cicatricial tissue does, and hence arises the central depression so characteristic of carcinoma in certain places.

Certain names are given the tumor to express the differences of relation between stroma and alveoli. The hard dense tumor due to central degeneration, having small alveoli and dense stroma, is called scirrhus. The softer tumor, with larger alveoli and softer stroma, is called medullary. Both scirrhus and medullary are seen in the same tumor. The hardness of a tumor is frequently only an evidence of the activity of the peripheral growth.

Every structure gives way before the growing epithelial masses. This is partly due to pressure and partly to the fact that the epithelial cells demand the nutrition which is provided for the opposing structures. Even the non-maligant tumor presents higher claims for nutrition than the normal tissues. It is not uncommon to find a fatty tumor in an individual so emaciated that almost all the normal fat has disappeared, but the fat cells of the tumor not only suffer no diminution in size and number, but continue to increase. The carcinoma not only grows peripherally as a solid mass, but in various places small masses of cells push out independently into the tissue and form new centres of growth which gradually coalesce with the central mass. The contraction of the tumor due to central degeneration is particularly seen in carcinomas of the alimentary canal. In this the central part of the tumor is connected with the lumen. The degenerated necrotic portions are invaded by bacteria, which find there a suitable soil for growth, and inflammation and ulceration results. In the stomach the necrotic portions are digested by the gastric juice. The stricture of the intestine results both from the masses of the tumor pushing into the lumen and from the contraction which constantly accompanies the degeneration.

The carcinoma not only tends to grow locally in the way we have seen, but similar tumors are formed elsewhere. In carcinomas these secondary or metastatic tumors are found in those lymphatic glands which are connected with the primary tumor by lymphatic vessels. In carcinomas of the alimentary canal the secondary growths are found not only in the lymphatic glands but in the liver, the connection being by blood-vessels of the portal system. The metastases repeat the structure of the primary tumor. Differences in the size and arrangement of the cells which characterize the primary tumor are found in the secondary. The same tendency to degeneration and the same form is seen in the secondary. Something capable of producing the same growth must be carried from the primary tumor to form metastases. We can trace the growth of the metastases much better than we can the growth of the primary tumor. By examining those lymphatic glands of the axilla removed with a carcinoma of the breast, which to the naked eye present no enlargement or deviation from the normal, the beginning of the metastasis can be seen. It begins in the periphery of the gland where the lymphatics coming from the primary growth enter. Cells of the same character as those in the primary growth are found in the lymph sinuses, and they grow here, the remainder of the gland forming the stroma.

The growth advances along the lymphatics in two ways. Solid masses of cells probably connected with the primary growth may push their way along the lymphatic vessels. I have seen all the lymphatic vessels of the scrotum injected with carcinoma this way, separate nodules being formed at intervals by more active proliferation of the cells in the lymphatics. In the carcinoma of the stomach it is not at all uncommon to find the lymphatics of the peritoneum over the tumor filled in this way with masses of cells. Secondly, not only can we trace these masses of cells in the lymphatic vessels, but by examining the tissue which is in the neighborhood of a carcinoma and which is apparently not affected, we can often find single epithelial cells within the lymphatics. In certain cases the tumor cells may push their way into blood-vessels. In carcinoma of the alimentary canal metastases both by the lymphatics and blood-vessels is the rule. This is probably to be explained by the presence of such numerous and thin-walled veins in the tissue.

We may certainly regard the metastases as due to the conveyance, by either the blood-vessels or lymphatics, of cells from the primary tumor to a distance. The proof of this is the close connection of the cells of the tumor with the lymphatic system, the presence of cells showing similar structure, mode of growth and tendency to degeneration in the secondary tumors, the beginning of secondary tumors in the lymphatic glands where the lymphatics enter the gland, and the presence not only of cell masses but of individual cells in the lymphatic vessels. The full recognition by surgeons

of the intimate relation between the cells of the tumor and the lymphatics has led to those methods of operation which have so reduced the danger of recurrence. We know that no carcinoma can be found so recent in its development that the lymphatic glands belonging to the part may not be affected. Hence these are removed with the primary tumor. Further, that the way of extension is by the passage of cells from the primary tumor or along the lymph vessels. It is of no use to remove the primary and secondary growth and leave a long street between the two which almost certainly contains straggling cells capable, each of them, of producing a new growth. Hence tissue containing lymphatic vessels connecting primary growth with lymphatic glands is removed as far as possible. Cells from the tumor, each capable of developing a new tumor, may be implanted in the tissues by the knife in the course of operation; hence the care exercised in avoiding incision into the tumor in the course of operation.

When we come to the question of the essential cause of carcinoma we enter the domain of theory. Of these theories we have, first, the influence of trauma, which is supposed to irritate tissues and to cause them to proliferate. Trauma alone has little to be said for it. The infrequency of carcinoma in those parts which are most exposed to trauma and its frequency in those parts least exposed speaks against this. No parts of the body are so exposed to trauma as the hands and feet, no parts less exposed than the mammary gland and the uterus. Even in the pessary days of gynecology carcinoma of the uterus was not made more frequent. Carcinoma of the lower lip, due to smoking, is a favorite example for the traumatist. Why the infrequency of carcinoma in the upper lip, which must be just as much exposed? It would take an accomplished juggler to hold a cigar in the lower lip. The appearance of the tumor at the period of life when traumas of all sorts are less apt to take place speaks also against it.

(2) The theory of Thiersch that the essential element in the production of a carcinoma is a degeneration of the connective tissues, in consequence of which the epithelium more easily grows into it. Such degeneration, if true, should be capable of demonstration, but has not been demonstrated.

(3) The theory of embryonic residues of tissue included in the normal tissues and capable of the enormous capacity of growth which characterizes embryonic tissue. This theory, though not original with Cohnheim, was taken up by him and advocated with all the force and charm which characterizes his work. In favor of this it must be said that there is much analogy between tumors and embryonic tissue, and that such remains of embryonic tissue may exist in the body and that tumors may develop from them. Considered purely as a theory, there is undoubtedly more to be said in favor of it than of any of the others. A modification of this theory has been advocated by Ribbert, who supposes that not only such embryonic tissues develop into tumors, but that when masses of epithelium become separated from their organic connection with other cells they may develop into carcinoma. There is danger in even discussing these theories that one may be tempted to advance one.

Probably the theory which of late is having the most attention paid it is that of the parasitic origin of carcinoma. From a purely theoretical point of view, there is much which speaks for and more against it. It must be considered a theory, for as yet parasites have never been demonstrated in a carcinoma, or certainly not in such a connection with it that they should be considered as causal. From a theoretical point of view, there are certain things which at first sight seem to favor the parasitic theory. First, the apparent increase in the number of deaths caused by the malignant tumors. If these tumors are due to embryonic causes or trauma, or such constantly operable causes, there would be no likelihood of increase. If due to parasites they could, like the other infectious diseases, show periods of increase and decline. There can be no doubt, from the numerous articles which have appeared on this subject, that the general mortality statistics show on the face a marked increase in cancer mortality in the last twenty-five years. It is possible to take mortality statistics and prove many things by them. Only those who know how mortality statistics are gathered, who see the crude returns before they are interpreted by the clerks in health offices and arranged in fair columns of figures, know their full unreliability. The exponents of protection and free trade have shown what can be done with the fairly accurate economic statistics. The more accurate statistics of insurance companies do not show this increase. The apparent increase deduced from the general statistics can be referred to a number of causes. There has been an increase in longevity, due principally to diminished mortality in the infectious diseases. Carcinoma is essentially a disease of later life, and more people reach what may be termed the carcinoma age. The diagnosis of carcinoma, especially of the internal organs, has become more accurate, and deaths are now properly attributed to this disease which were formerly put down under other heads. Deaths from carcinoma were formerly concealed as much as possible, so great was the horror of the disease and the fear of heredity. Hospital surgeons gain a general idea of increase from the number of cases who come to the hospital for operation, due to the great success which now attends such operations. The disease carcinoma in some respects shows a similarity to the chronic infectious diseases. Like these, it commences in some locality, and from this it extends to other parts by means of the blood or by lymphatic vessels. In carcinoma, as in infectious diseases, there develops after a variable time, a condition of wasting and malnutrition, which is termed cachexia. When we examine more closely, the analogy is not so evident. In the first place, the tissue lesions are totally different. There is a great deal of similarity in the lesions of all the infectious diseases. They consist in a combination of degeneration and proliferation of tissue. In certain of them, as in tuberculosis, the character of the degeneration produces a typical lesion from which it is possible to make a diagnosis, though not with absolute certainty. All the new tissue formed is of an indifferent type and of the general character of the granulation tissue of inflammation. In the metastases the same general character of lesion is produced as in the primary. Opposed to this, in carcinoma a definite tissue is produced consisting of epithelium growing into a connective-tissue stroma. It is not an indifferent tissue which might arise from proliferation of the connective tissue, but is a definite tissue formation consisting of epithelial tissue in a definite relation to connective tissue. Moreover, the metastases show the

same type. It is possible to have in the liver secondary to an adenocarcinoma of the rectum an almost perfect reproduction of the glands of Lieberkühn. If the cells are small in the primary growth, if they have any peculiarity in arrangement, if they show any peculiar form of degeneration, the same is true of the metastases. The metastasis which has been used by the exponents of the parasitic theory as showing the analogy between carcinoma and infectious diseases cannot be produced by parasites alone. In the infectious diseases the primary lesion is usually at some point which is open to infection from without, as the lungs in tuberculosis. In carcinoma the disease is most frequent in those parts in which the ordinary infections are most rare. Certain peculiar bodies are found included in the cells of carcinoma which have been considered as parasites. It is perfectly true that we do find in the epithelial cells of carcinoma small structures of whose nature we are for the most part ignorant. We do not better the situation by saying, therefore, they must be parasites. They show no definite size or form, they have no definite reaction to the aniline dyes, and if parasites, they differ from any known type. It is not impossible that carcinoma may be due to the invasion of the tissue by a parasite. If true, the invasion must take place only in the latter half of life, in places least exposed to invasion of the ordinary infectious agents, the parasite must enter every cell, causing it to proliferate and grow in a peculiar way, and must be carried with the cell into other parts of the body and there again cause the same peculiar cell growth.

The enormous advance in our knowledge of disease in the last twenty-five years has scarcely affected the malignant tumors. The classification has been improved and we know their structure rather better, and that is about all. There is need now not of any new theory, but of close investigation. The parasite theory must be taken up and definitely proven or set aside. The question of their inoculability must be determined. The investigation should cover not only the malignant tumors in man, but possibly a more fruitful field may be found in the tumors of lower animals, particularly the common tumors of fish. Such investigations are being carried out in various places in other countries and in this, and we confidently believe that the results of these investigations will lead to an increase of our knowledge and, with this, increase in our power to relieve.

TWO CASES OF INJURY OF THE CORD RESULTING FROM FRACTURE OF THE SPINE.[1]

BY JOHN JENKS THOMAS, A.M., M.D., BOSTON.,
Assistant in Nervous Diseases, Boston City Hospital; Assistant Neurologist, Children's Hospital, etc.

(Concluded from No. 10, p. 235.)

Microscopical examination. — Sections were made at various levels and stained with hematoxylin and eosin; hematoxylin and picric acid and acid fuchsin; Unna's alkaline methylene-blue and eosin; Weigert's myelin-sheath stain; and Pal's modification of this followed by acid fuchsin; and according to Marchi's method.

Sections at the level of the third cervical segment showed marked dilatation of the blood-vessels of the pia, and of the anterior and posterior nerve roots. Numerous dilated blood-vessels are found throughout the cord, both in the white and in the gray matter, and also numerous hemorrhages in all parts of the cord, many of them in the white substance and of considerable size. These radiate in many cases from the gray matter of the cord toward the periphery. Throughout the white substance there is seen a large number of enormously swollen nerve fibres, staining homogeneously with hematoxylin, and there is also considerable edema. This condition is in general more marked near the gray matter of the cord, and is seen in both the posterior, lateral and anterior tracts; still a considerable number of these swollen fibres are seen at the periphery, notably in the lateral tracts. Throughout the posterior horns there are extensive hemorrhages, while the anterior horns are almost completely destroyed by hemorrhage, especially the lateral horns and the outer portion of the anterior horn, where none of the normal structures can be made out. Here and there among the mass of red blood corpuscles are seen irregularly oval masses staining homogeneously with hematoxylin, which are evidently remains of nerve cells. In the area of hemorrhage there is a moderate number of cells, chiefly leucocytes with vesicular polymorphous nuclei and a few large phagocytic cells with small more deeply staining nuclei. Many of these cells are filled with dark brownish pigment, and a considerable amount of this pigment is seen lying free. In some of the perivascular lymph spaces in the neighborhood of the hemorrhagic areas are numbers of leucocytes and phagocytic cells loaded with pigment. The sections stained by Marchi's method show that these cells have taken up a considerable amount of degenerated myelin. There is also a considerable amount of degenerated myelin throughout the section, not more marked in one part of the cord than in another. The myelin sheaths of many of the enormously swollen fibres spoken of above show as thin black or grayish lines surrounding the swollen axis cylinder.

Sections from a little above the first level show much the same condition except that the hemorrhages in the white matter are few and small, and the hemorrhages in the posterior horns are smaller, and a portion of the inner border of the anterior horn has escaped destruction, at which place a few nerve cells can be seen which are fairly normal.

Sections from about the level of the seventh cervical segment show great dilatation of the blood-vessels of the gray matter of the cord. There is also a small hemorrhage at the tip of the right anterior horn. In the middle of the left posterior column is a circular area, which is very edematous, and contains a great many enormously swollen nerve fibres, and quite numerous leucocytes filled with dark reddish-brown pigment. Here also there is dilatation of the blood-vessels of the nerve roots and the pia. Sections stained by Marchi's method show a diffuse fatty degeneration of nerve sheaths and axis cylinders in all parts of the cord, though most of the fibres are unaffected. There is also a well-marked degeneration of the nerve roots, the anterior and the posterior ones being about equally affected.

Sections from various levels of the cord stained by Weigert's and Pal's methods show no degeneration of the ascending or descending tracts. There are no hemorrhages in the pia.

[1] From the Pathological Laboratory of the Boston City Hospital. — Read before the Boston Society for Medical Improvement, May 8, 1899.

Summary. — This cord showed at the level of the third cervical segment a narrow area where there were almost complete destruction of the cord, complete destruction of the gray matter, by hemorrhage, and very numerous and large hemorrhages in the white substance, with destruction of some fibres and marked swelling of many of the remaining fibres, damage which was probably sufficient to cause nearly complete interruption of conduction in the fibres which had not been torn. The hemorrhage in the gray matter had extended upward and downward, chiefly in the anterior horns, for a distance of about half a centimetre, and areas of hemorrhage or remains of hemorrhage were seen at quite a distance from the part of the cord which had been crushed, one especially in the anterior horn as low as the seventh cervical segment. There was also a moderate diffuse degeneration of nerve sheaths and fibres throughout the cord, to about the same extent in the anterior, lateral and posterior tracts both above and below the injured area, and a degeneration, moderate in amount, of the fibres of both anterior and posterior nerve roots, though not as marked as in the first case. This case, like the first one, showed no signs of secondary degeneration of ascending or descending nerve tracts, and probably for the same reason, and there were also no hemorrhages seen in the pia.

The consideration of these cases of injury of the spinal cord brings up several questions of importance. In both the greatest damage to the cord was evidently caused by compression, probably produced by displacement of one vertebra upon the other, though accompanied in the first case by fracture, as frequently happens. Certainly the narrow area of softening in the second case could have been produced in no other way than by direct compression. In this case no fracture of the bodies of the vertebræ could be made out at the autopsy. In the first case the compressed portion of the cord was greater, and more fractures of the vertebral bodies were present. In neither case was there any pressure directly upon the cord found, either from fragments of bone or from hemorrhage. This was also true of the case reported by Dr. Courtney and myself, and in the three other autopsies at the Boston City Hospital on cases of fracture of the spine in the cervical region. Thus we see that in all the six cases of fracture of the spine in the cervical region which have come to autopsy at this hospital since 1881 there has been no instance of pressure from either hemorrhage or fragments of bone. The pathological changes found were in both cases those of a myelomalacia, with hemorrhages, probably the direct results of the pressure which is produced at the time of the accident. That the cord is not found compressed at the autopsy is because of the ease with which the dislocation is reduced either ante or post mortem, a point to which attention has been called by Thorburn, Kocher, Wagner and Stolper, and others. No fractures of the substance of the cord were seen, though in the first case the softening, as is often the case, was excessive, and the cord was exceedingly difficult to handle even after hardening. Certainly judging from the sections of the three cases of injury of the cord from fracture of the spine which I have made, the case reported by Dr. Courtney, and the two reported in this paper, I must look with suspicion upon such changes as have recently been reported by Dr. Taylor. Hemorrhage as a cause of pressure was not found in any of the six cases referred to, and must certainly be rare, and probably cannot be diagnosticated except when of the gravescent type. In these three cases there was extensive hemorrhage into the substance of the cord, which in the two cases now under consideration extended in the gray matter of the cord both above and below the area of crushing. The presence of these areas of hemorrhage in cases where there has been direct injury of the spinal cord shows that the direct effects of the crush are not the only conditions with which we have to deal, and the chance of hematomyelia following trauma makes the possibility of relieving the symptoms by operation much smaller. It seems somewhat doubtful, however, whether this condition is primary, as Bailey has claimed, but certainly these hemorrhages are found after trauma, and that, too, in the less severely injured cases, though it seems more likely that they are due to direct injury to the cord in most cases rather than to any possibility that the cord, with intact vertebral column, can be stretched to a sufficient extent to produce these hemorrhages. These hemorrhages into the substance of the cord, as is well known, are more apt to occur in the gray matter, though cases are reported in which they have been found in other locations. They frequently extend for a considerable distance above and below the crushed portion of the cord. Probably these hemorrhages varying in extent in the two sides of the cord explain the often observed fact of different levels on the two sides of the body of the upper border of altered sensation.

Another point of interest in these cases is the absent knee-jerk in the first case, and the much diminished reflexes in the second one. This fact of the loss of the reflexes, especially the tendon reflexes, — for the superficial reflexes more often vary, particularly the plantar reflex, — in cases of serious injury of the spinal cord has attracted great attention, and many explanations have been brought forward. This loss was first spoken of as a constant symptom in cases of complete interruption of conduction in the spinal cord in 1882 by Bastian. He attempted to explain this as due to the interruption of tracts from the cerebellum and brought forward the supposed antagonism of the cerebrum and the cerebellum to explain various phenomena in a very ingenious way. Bruns, in Germany, accepted Bastian's conclusions and facts, but hesitated to produce any theory in explanation. Since that time many writers have taken up the subject, each showing more ability in opposing fatal objections to the theories offered by his predecessors than in himself offering any sufficient explanation. Stieglitz rejects Bastian's theory as not sufficient, and thinks that the degeneration of nerve fibres requires time, and that during this period conduction is still present, and that this degeneration of fibres inhibitory of the knee-jerk acts as an excitation of these fibres, and hence has an inhibitory influence, because of the specific energy of nerve fibres. He thinks this action is easier to understand because this inhibition from the higher centres probably acts through local inhibitory centres in much the same way that the vagus acts upon the heart. Herter and Sternberg explain this phenomenon by much the same mechanism, but adduce as the irritant the crushed portion of the cord, acting upon the upper end of the lower uninjured cord. Fraenkel thinks

the absence of the knee-jerk can only be explained by assuming an arc to the brain, the ascending limb of which he places in the tract of Gowers, but it is difficult to imagine a constant stimulation of this arc from the periphery, nor can Fraenkel satisfactorily explain that the time interval involved in the production of the knee-jerk is too short for the transmission of any impulse to the brain and back to the muscle. Gerhardt explains the phenomenon by an inhibition similar to that in traumatic epilepsy. Egger ascribes it to a functional disturbance which in time can lead to an organic lesion of peripheral nerves and muscles, which produces the permanent loss.

Whatever the explanation, the fact remains certain that in a large proportion of cases of serious injury to the spinal cord in the cervical or upper dorsal region the knee-jerks are lost, and often permanently. This, however, cannot be assumed as evidence in itself of a total transverse lesion of the cord, as too many cases have been reported in which the knee-jerks have been increased, either throughout the disease or in its later course, when examination of the lumbar cord showed it to be normal, as the case reported recently by Senator, and by Fürbinger, though in the latter the examination was not reported fully. Bischoff analyzes a number of cases from the literature and attempts to prove that in cases of total transverse lesion the reflexes may be either absent or increased, and that, conversely, with partial lesion either condition may be present. Bruns, however, has subjected these cases of retained knee-jerk with complete transverse lesion of the cord to a merciless criticism, and rejects them all. Bischoff calls attention also to the fact that operative experiments upon the cerebellum, tumors, and cases of atrophy of the cerebellum all tend to show that the action of this organ upon the knee-jerk is rather inhibitory, and that therefore destruction of paths from the cerebellum would tend to cause the increase of this reflex. He finally concludes that the cause of the loss of knee-jerk in these cases must be a local one, and that this must be in the peripheral nerve, and ascribe it to anemia produced by circulatory changes resulting from the shock of the accident. We have not spoken of shock as a cause of the loss of the reflexes, as that could only be a temporary cause, while the loss is more often permanent. As Bruns was the first, so he has remained almost the only one who has published a case in which the lumbar region of the cord, the peripheral nerve, and the muscles have all been examined carefully, though at least half a dozen other cases, as Senator's second case, have been reported where a sufficient examination of the lumbar cord has been made, to afford a firm basis for Bastian's claims. Van Gehuchten has recently clearly stated the conditions of loss of the reflexes. The muscle tonus is only the expression of the continuous stimulation of the motor cells of the anterior horn, which is produced by the other neurons in relation to which the cell is placed. These neurons are:

(1) The fibres of the posterior nerve roots.

(2) The cortico-spinal pyramidal fibres.

(3) The descending cerebellar-spinal fibres.

(4) The fibres of the posterior columns, arising chiefly from the mid-brain. These descending fibres lie in the comma tract of Schultze, and in the borders of the antero-lateral tracts.

The pyramidal fibres have an inhibitory influence. The posterior nerve roots bring a certain amount of stimulating influence, while the cerebellar fibres, and the posterior descending fibres act apparently energetically as a stimulating influence. Hence the loss of reflex movements can only recur under three conditions:

(1) An anatomical or functional interruption at some point of the reflex arc.

(2) From an abnormally strong inhibitory action upon the motor cells, as from shock.

(3) By a diminution of the nervous tone of the cells of the anterior horn below a certain minimum, as occurs in transverse lesions of the cervical and upper dorsal cord, and occasionally in partial lesions.

The first of these two patients lived eight days, and so the loss of the reflexes in this case cannot be ascribed to shock, but it is possible that this may have been a cause in the second case, where death took place upon the third day. While I cannot advance an explanation of the disappearance of the reflexes in severe transverse lesions of the upper part of the spinal cord, I wish to call attention to the fairly well-marked degeneration of both posterior and anterior nerve roots in all three of these cases examined by me, as shown by the use of Marchi's method, which has been used, so far as I have been able to find, only by Bischoff, though in this connection I wish to call attention to the changes in the structure of the cells of the anterior horn recently described by Marinesco. The presence of these changes and degenerations is in favor of the theories of Egger and Bischoff, and that such changes should occur at a distance from the actual lesion cannot surprise us when we consider the marked circulatory and nutritive changes which accompany severe injuries of the spinal cord, as shown by the marked sweating so often seen. It seems probable, therefore, that in these cases of total interruption of conduction in the spinal cord in its upper regions we have to do in different cases with different causes for the abolition of the reflexes. In cases of fracture with severe crush of the cord, in addition to factors which come into play in the cases of destruction of the cord by slow compression, there are often the functional and degenerative changes in the reflex arc itself, probably produced by the changes in circulation, and this may be operative in the cases of partial destruction of the cord, where conduction has been lost for a time after the injury, without absolute interruption of the continuity of all the fibres in the cord. Such an explanation, however, will not suffice for the case of Bastian, more than once referred to by Bruns, in which the knee-jerks were absent at times and present at others, always appearing and disappearing with changes in the sensation, which were always completely abolished when the knee-jerks were absent, and returned with their return. Here we must, I think, assume disturbances of conduction of fibres from the cerebrum and cerebellum, and no more satisfactory explanation has yet been given than that first brought forward by Bastian, and by Jackson, and recently by Van Gehuchten. We have at all events in this loss of the knee-jerk an added symptom from which we may infer a severe injury of the upper portion of the spinal cord.

Cases of fracture or dislocation of the spinal column are probably more frequent than is generally supposed, as many of them are slight, and in these the spinal cord escapes or is only very slightly injured, as

we see in many of the cases reported by Kocher, and by Wagner and Stolper.

We cannot take up in so short a paper the various forms of injury of the spinal column in detail, but the method of production is of importance, and these are of three chief classes.

(1) Direct crushing blows upon the arches of the vertebræ.

(2) Falls upon the head or buttocks, usually producing a crush of the bodies of one or more vertebræ.

(3) Forced flexions, or more rarely extensions, of the spine, producing dislocations, with or without fracture, which are usually of the bodies of the vertebræ, and of the articular processes only.

The question of treatment of these injuries is of course the most important one with which we have to deal, and in regard to this our conclusions will vary with the conditions present. In the cases of no injury or only slight injury of the spinal cord the problem is a comparatively simple one. The normal relations of the bony parts must be restored by manipulations or operation, or both, so far as is possible, due care being exercised to avoid injury of the spinal cord. Where the cord has been seriously injured, as is unfortunately frequently the case in the fracture-dislocations of the cervical region, we should endeavor to ascertain the extent of this damage, and the question arises whether we are able to do this. I think we can certainly answer this question in the affirmative, as Herter did in 1891. It is on the following factors that we must base our opinion as to whether we have a total transverse lesion of the cord or a partial one. The first point which influences our decision is the history of the onset of the symptoms, whether sudden and at once, or gradual and after an interval, the first being seen in the cases of complete crush. Then in these cases the motor paralysis is complete and generally of the flaccid type, while in the partial injuries it is more apt to be partial, and accompanied by muscular spasm. The same condition of complete or partial impairment of sensation in these two classes of injury is also seen, and we should include all forms of sensation, not neglecting that of localization, which Fraenkel believes to have a close relation to the knee-jerks. The condition of the reflexes also affords us aid, as they are more apt to be abolished in the complete transverse lesions, though this is somewhat variable, and particularly so in regard to the plantar reflex, which is often retained when the remaining reflexes are lost. The complete paralysis of the sphincters of the bladder and rectum again points to a severe injury of the cord, but here we should guard against considering the ability of the bladder to retain a certain amount of urine as an indication that it is normal, a point to which Thorburn and others have called especial attention. In paralysis of the bladder there remains a certain amount of tonic contraction of the sphincter, and this permits the bladder to become filled, when the urine escapes not by dribbling, but in considerable quantities, the discharge often being brought about by a change of pressure, as in changing the position of the patient. Again, priapism is more common in the severe injuries of the cord, as is also the severe sweating, and the involuntary muscular twitchings in the paralyzed muscles. On the other hand, pain is more often present in the partial lesion, meaning by this symptom, of course, spontaneous pain in the paralyzed limbs. Most important of all, perhaps, in enabling us to decide that the lesion is only a partial one are variations in the symptoms of paralysis, loss of sensation and others, which show that conduction through the injured portion of the cord has not been entirely lost.

From these symptoms, then, we can draw conclusions as to the condition of the spinal cord, and I know of no one who has claimed to be able to produce favorable results by operation on cases of total crush of the cord. It is then only in cases where the lesion of the cord is a partial one that we can hope for relief, though it is sometimes claimed that the chance of the interruption of conduction being produced by pressure upon the cord warrants us in operating upon even apparently hopeless cases. A careful study of a large number of cases reported by Wagner and Stolper, and Kocher, as well as from the literature in general, shows us that this condition is extremely rare either from hemorrhage or from fragments of bone. The cases in which pressure from fragments of bone exists are practically limited to those in which the arches of the vertebræ are crushed by direct violence. In other cases the strong anterior ligament is seldom broken, and this prevents fragments of the bodies of the vertebræ from pressing upon the cord, so that nothing can exert pressure except the continued displacement of one vertebra upon another, and this is produced in the large majority of cases by forced flexion of the spinal column, and is usually remedied by hyperextension of the spine, perhaps aided by slight extension, followed later by fixation in some manner, in all cases where the bones have not already resumed their normal position when the patient is first placed upon his back by bystanders or others. The only class of cases then that remains in which operation offers any hope of aid are, as Thorburn concludes, those in which the arches have been crushed by direct violence, either by blows upon the back, bullet wounds, or the way in which the patient has fallen. In these cases, and practically in these cases alone, have we a reasonable chance of finding continued pressure upon the spinal cord, and relieving it by operation, though even here the final result must depend upon the damage done to the cord, for the estimation of which I have tried to give the indications in this paper. In conclusion, I can only state that in all cases of injury of the spinal column severe enough to injure the cord, we are unfortunately apt to find that irreparable injury has been done to the cord, either from hemorrhage into its substance, or complete crush of it, so that the prospect of relief of symptoms of these cases by operation is slight, and we can only sorrowfully say in regard to this field of surgery of the spine, as Brissaud does: "Je reste convaincu que la chirurgie de la moelle épinière est pleine de promesse, comme l'enfer est pavé de bonnes intentions."

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GROWTH AND SOCIOLOGICAL CONDITIONS.

BY ARTHUR MACDONALD,
Specialist in the United States Bureau of Education, Washington, D. C.

THE following investigations in juvenile anthropometry show experimentally the influence of sociological surroundings upon the growth of children.

Further demonstration of the influence of such conditions can be found in a work [1] (by the writer) published by the United States Bureau of Education.

Influence of unfavorable conditions on the life and physical development of youth is shown in the following table of Pagliani:

TABLE I.

Number of persons.	Age. Years.	Average weight. Kilogrammes.	Average height. Centimetres.	Average chest girth. Centimetres.	Average lung capacity. Cubic centimetres.	Average muscular force. Kilogrammes.
9	10	24.51	126.3	61.0	1,660	66.5
34	11	26.18	128.1	61.2	1,700	68.5
45	12	28.38	132.1	62.8	1,860	79.0
41	13	31.75	137.5	65.2	2,045	95.0
29	14	33.06	140.0	66.4	2,100	105.0
23	15	39.36	148.6	69.5	2,445	118.5
15	16	41.47	151.2	70.3	2,485	121.0
9	17	43.20	151.3	71.6	2,660	136.6
6	18	44.55	154.3	72.6	3,115	142.6
4	19	46.65	156.0	74.2	3,128	150.0

These measurements were made on the inmates of an institution in Italy.

In Table II by Weissenberg the number in some of the groups is not large, but the figures show a general regularity.

The poor are less in height and weight than the wealthy classes.

INFLUENCE OF POVERTY ON NUTRITION.

In Table III Vazhnoff shows the influence of unfavorable conditions on nutrition among Russian children.

DEGENERATION OF GROWTH.

According to Liharzik, growth is regular, and all deviation tends to produce disease, as disease also produces deviation. A large head is frequently accompanied with a contracted chest; here mental action may be slow — probably from deficient supply of purified blood. Boys of small frames often have rather large heads and are deficient in repose of character. City-bred children are usually more vivacious, but

[1] Experimental Study of Children, including anthropometrical and psychophysical measurements of Washington school-children; measurements of school-children in United States and Europe; description of instruments of decision in the laboratory of the Bureau of Education; child study in the United States; and a bibliography. Reprint (from Annual Report of United States Commissioner of Education for 1897-98), 325 pages, 8vo. Washington, D. C., 1899.

have less power of endurance than children reared in the country.

In the report of the anthropometric committee of the British Association for the Advancement of Science are given the results of observations in over 50,000

WELL-TO-DO CLASSES SUPERIOR IN HEIGHT AND WEIGHT.

Dr. Paul Hasse in 1880 measured 2,806 children in Gohlis-Leipzig — 1,386 boys and 1,420 girls. The

TABLE II.

Age.	Length of body.			Weight of body.			Strength of lift.		
	Poor. Cm.	Middle classes. Cm.	Wealthy. Cm.	Poor. Kilos.	Middle classes. Kilos.	Wealthy. Kilos.	Poor. Kilos.	Middle classes. Kilos.	Wealthy. Kilos.
10 years	124.2	124.7	125.6	25.95	25.69	25.25	36.2	34.6	32.1
11 years	125.9	128.0	131.5	26.99	27.29	27.28	40.1	40.7	40.1
12 years	130.8	134.5	137.8	29.03	30.75	31.97	49.4	54.2	53.2
13 years	133.3	137.7	140.4	31.23	33.34	34.74	54.5	60.8	60.5

TABLE II. — Continued.

Age.	Length of body.			Weight of body.			Strength of lift.		
	Tailor. Cm.	Middle class. Cm.	Smith. Cm.	Tailor. Kilos.	Middle class. Kilos.	Smith. Kilos.	Middle class. Kilos.	Tailor. Kilos.	Smith. Kilos.
13 years	138.4	137.7	138.4	33.52	33.34	33.68	65.4	60.8	67.0
14 years	144.4	144.8	143.8	37.47	37.89	36.59	80.3	80.1	80.3
15 years	147.7	148.2	145.9	40.07	40.98	40.30	81.9	90.6	89.7
16 years	152.5	155.8	149.7	45.52	46.34	40.87	97.1	107.2	111.7
17 years	160.0	160.1	157.4	50.10	51.40	51.40	98.7	119.9	138.0
18 years	159.0	161.1	161.0	50.76	53.98	52.84	120.8	129.6	136.8
19 years	161.0	164.1	165.0	54.24	56.75	61.50	123.0	143.4	175.0
20 years	164.5	164.0	163.3	54.67	56.60	57.10	124.7	149.9	175.2
21–25 years	162.5	164.8	166.5	55.37	59.51	61.69	122.0	143.7	185.5
26–30 years	162.9	165.9	167.8	56.91	61.69	63 86	126.4	142.8	170.9
31–40 years	162.4	164.3	167.2	58.09	60.45	63.91	105.0	133.0	165.0
41–50 years	164.1	164.2	164.8	59.53	62.92	62.40	97.30	124.5	152.5

individuals. In Table IV is shown how the growth degenerates as we go lower in the social scale: there is a difference of five inches in average statures between the best and worst nurtured classes in the community.

From this table will be seen the relative statures of

average heights and weights at different ages are shown in Table V.

Comparing the poor with the well-to-do classes, the results show that for boys of the same age the height varies from 0.7 to 4 centimetres in favor of the well-to-do classes; for girls it varies from 1.7 to 4.1 centi-

TABLE III.

Age.	Nutrition.													
	Boys.							Girls.						
	Poor.		Medium.		Good.		Total number.	Poor.		Medium.		Good.		Total number.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
1 year	51	25	90	44	64	31	205	20	25	30	37	31	38	81
2 years	38	21	68	37	76	42	182	7	15	19	41	20	44	46
3 years	22	20	43	39	45	41	110	2	10	4	21	13	69	19
4 years	7	13	25	47	21	40	53	1	16	4	66	1	16	6
5 years	2	17	4	36	5	47	11	..	..	1	..	2	..	3
6 years	..	..	..	..	1	..	1	..	..	..	..	..	..	..
Total	120	21.3	230	40.9	212	37.7	562	30	19	58	37	67	44	155

boys of the age of eleven to twelve years under different social and physical conditions of life. The zigzag line running through the means shows the degradation of stature as the boys are further and further removed from the most favorable conditions of growth.

metres in favor of the well-to-do. The children of the well-to-do classes excel also in weight for the same age; for boys the excess runs from 0.3 to 4.7 pounds; for girls from 1.6 to 4.6 pounds. In general the difference between the classes is not so great as in other places, as in Freiburg and Turin, except in Boston,

where the difference between the classes is less marked.

Hasse also gives data concerning the weak or defective children, who generally cannot attend school regularly. Such children are usually abnormally developed or have some chronic ailment. In the primary schools nine per cent. belonged to this class. A striking fact is this, that in many cases these children in certain years were over normal; that is, were taller and heavier than other children. This suggests that there is a certain normal relation between mental and physical development, the finding of which is one of the aims of anthropometry.

TABLE IV.

Height.	Total number of observations.	Public schools, country.	Middle-class schools.		Elementary schools.				Military asylums.	Industrial schools.
			Upper towns.	Lower towns.	Agricultural laborers, country.	Artisans, towns.	Factories and workshops.			
							Country.	Towns.		
60 inches	6	2	..	3	..	1	..	..	..	..
59 inches	16	2	3	5	2	2	..	..	1	..
58 inches	35	9	9	8	5	0	2	..	2	..
57 inches	66	11	17	13	4	4	5	5	7	1
56 inches	118	21	23	27	14	4	10	3	15	..
55 inches	230	28	35	57	32	15	13	17	33	..
54 inches	329	35	53	68	47	24	36	20	46	2
53 inches	361	15	55	58	47	26	34	38	84	4
52 inches	441	14	37	61	58	36	52	59	118	6
51 inches	370	6	25	40	36	28	45	57	123	10
50 inches	367	7	23	27	32	17	46	61	143	11
49 inches	252	2	8	20	14	12	31	40	114	11
48 inches	132	..	3	1	7	4	11	20	76	10
47 inches	102	..	3	4	5	7	5	13	59	6
46 inches	22	..	..	..	1	1	3	7	7	3
45 inches	12	..	..	..	..	..	..	1	10	1
44 inches	1	..	..	..	..	..	..	..	..	1
43 inches	1	..	..	..	..	..	..	..	1	..
42 inches	1	..	..	..	..	..	..	..	1	..
Total	2,862	150	294	392	304	181	293	341	840	66
Average height	52.60	54.98	53.85	53.70	53.01	52.60	52.17	51.56	51.20	50.02
Mean height	52.5	55.0	54.0	53.5	53.0	52.5	52.0	51.5	51.0	50.0

TABLE V.

Age.	Height.		Weight.	
	Boys. Cm.	Girls. Cm.	Boys. Pounds.	Girls. Pounds.
6-7 years	110.2	109.3	42 7	40.9
7-8 years	114.4	113.7	45.8	44.7
8-9 years	119.4	117.7	49.3	48.1
9-10 years	123.9	124.0	53.4	52.4
10-11 years	129.1	128.6	57.5	57.0
11-12 years	132.4	133.9	61.9	63.2
12-13 years	138.2	139.5	69.1	70.5
13-14 years	140.7	145.1	71.8	77.2
Over 14 years	146.2	149.1	79.8	86.5

A PENSION FOR A DISTINGUISHED PHYSICIAN. — According to the *Lancet* for August 5th, her Majesty's government, on the recommendation of the governor-general of India in council, has conferred on the distinguished physician Sir Joseph Fayrer, as a reward for distinguished and meritorious service, a pension of £100 per annum.

Clinical Department.

AN EXTERNAL APPLICATION IN SCARLET FFVER TO SHORTEN THE PERIOD OF DESQUAMATION AND DIMINISH THE DANGER FROM IT.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

IT is thought that scarlet fever is disseminated in part by means of the epithelium which is shed during desquamation. To prevent the spread of the scales during this time an application should be made to the skin and we can choose one that combines several qualities. It should be harmless to the patient, sticky enough to diminish the mechanical dissemination of the peeled skin and yet promote its removal and hasten the return of this organ to a healthy condition, and also have some germicidal properties. I have found glycerin mixed with hydrogen-dioxide solution containing a little free hydrochloric acid, which latter contributes germicidal properties to the mixture, to answer this purpose; one part glycerin to seven parts of a ten-volume hydrogen-dioxide solution. If the amount of hydrochloric or nitric acid in the dioxide solution is very small more may be added, but if the solution contains one-twentieth to one-tenth of one per cent. it will probably have considerable germicidal action if in contact with the scales for some time.[1]

Several years ago, in the scarlet-fever wards of the Boston City Hospital, I demonstrated that the period of desquamation could be shortened by the use of this mixture. The method which I used may be briefly described by quoting from a paper which I

[1] It should not be brought in contact with colored fabrics.

published in the *American Journal of the Medical Sciences*, August, 1895.

"In scarlet fever it seems to me desirable to prevent the dissemination of the epithelial scales which are often shed abundantly, and to hasten the removal of the layer of epithelium in order to free the normal skin. For this purpose I have the patient rubbed all over daily — avoiding the hair — with a mixture containing seven parts of ten-volume hydrogen-dioxide solution and one part of glycerin; if the patient finds this too sticky, the proportion of glycerin may be reduced. A quarter of the body may be done at a time, and some hours later another quarter and so on. As soon as any portion of the skin is normal the application may be there dispensed with." The average length of the period of desquamation may be reduced if this treatment is properly carried out. To shorten this period is desirable in private practice and in a hospital it has a money value. Take, for example, 1,000 cases; if this treatment will shorten the stay of the patients only three days (I found the average more than this) we have a total of 3,000 days, or eight years, saved.

Medical Progress.

REPORT ON PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D., AND JOHN W. BARTOL, M.D., BOSTON.

(Concluded from No. 10, p. 241.)

OPEN DUCTUS BOTALLI.

THE comparative frequency of cases of congenital cardiac defect persisting without essential impairment of development or marked circulatory disturbances, is again illustrated by two instances of open ductus Botalli reported by Burghart[7] and Drasche.[8] Both patients were adults, twenty-one and twenty-eight years of age, and neither showed anything of special significance in previous history or general examination; there was no cyanosis or evidence of defective blood supply.

In the first case there was visible pulsation in second intercostal space to left of sternum, apex beat strong and heaving just outside nipple line (space not stated), dulness from upper border of fourth, extending toward right as far as mid-sternum; above this dulness, however, was a "ribbon-shaped" area of dulness two and one-half to three centimetres broad, running upward near left sternal border; in the second left intercostal space was felt a strong thrill which seemed transmitted up and to the left, but could be felt everywhere over precordial area; in the second left space a sharply localized murmur occupying systolic interval and extending into diastole; no second sound except after rest in bed; murmur plainly heard ten centimetres from body; aortic sounds masked by pulmonic murmurs which were also heard in left interscapular region. From above facts, observer concludes that ductus was open, but he infers that there was probably also pulmonary stenosis.

In the second case pulsation was visible in the second and fifth intercostal spaces and a thrill palpable in second and third; apex in fifth, heaving; dulness beginning in second space and extending to right one centimetre beyond left sternum border; at apex systolic murmur, second sound pure; in second left space a peculiar systolic murmur of marked intensity; second sound somewhat accentuated and followed by a soft murmur; the systolic murmur at times quite rough and "whirling," loudly transmitted to carotids; over aortic area a systolic murmur and faint second sound. At autopsy (death due to caustic-potash poisoning) was found a small, thin-walled heart; the aorta and pulmonary artery touched each other at site of ductus Botalli, through which could be passed a probe three millimetres in diameter; through foramen ovale could be passed a bristle only. It was assumed that both systolic and diastolic murmurs were due to stream of blood pouring into pulmonary artery from aorta, where pressure is at all times greater.

The important diagnostic signs are considered to be a systolic murmur of extraordinary intensity, variously described as rasping, whirling, rustling, buzzing, or even musical, heard loudest in first or second left intercostal space, where also generally pulsation is visible and a thrill palpable; diastolic murmurs are less often heard. The area of heart's dulness is somewhat increased and Gerhardt describes as characteristic the ribbon-shaped area of dulness in the first and third space, corresponding to the dilated pulmonary artery.

[7] Deut. med. Woch., 1898.
[8] Wien. klin. Woch., 1898.

ACUTE ENDOCARDITIS.

Harbitz[9] has made a careful study of all the cases of endocarditis which have come under his observation during the past four years. Forty-three of these were classed as infectious, of which seventeen were due to the streptococcus, five to the pneumococcus, eight to the the staphylococcus and three to other specific organisms. In addition there were ten cases of healed infectious endocarditis. Although due to the ordinary pyogenic bacteria they differed so markedly both in the pathological appearances and clinical history, that a division into two groups is fully justified. The first is represented by those classes whose point of origin is found as a rule in some local collection of pus and which run a rapid course as a fulminating pyemia with high fever. At the autopsy a diphtheritic membrane is usually found in the valves as well as ulcerative and necrotic foci in the valvular substance, and occasionally at their bases abscess cavities are seen running deeply into the cardiac muscle. At the same time multiple abscesses are found as a rule in the skin, heart, spleen, kidneys, eyes, etc. These cases illustrate the classical description of malignant endocarditis and most commonly result from infection with the pyogenic staphylococci.

In the second group, due chiefly to streptococci or pneumococci, the inflammation of the endocardium does not appear as one symptom of a general infection, but rather as the central focus from which the infection was spread. A striking feature is their long duration, four, six or even ten months elapsing between the appearance of the first symptom and the death of the patient. The onset of the disease is gradual, the first symptoms consisting of slight fever, rheumatic pains and malaise, which gradually give way to more serious manifestations, dyspnea, cough, hemorrhages, cyanosis and edema. Fever may be slight throughout, or it may be remittent or intermittent. Symptoms connected with the kidneys are often so pronounced that clinically the case is regarded as one of

[9] Deut. med. Woch., February 23, 1899.

hemorrhagic or parenchymatous nephritis. Pathologically, destructive changes, ulcerations or abscesses, are rarely found, nor does a cellular infiltration or necrotic foci appear in the neighboring valvular tissue. The process, as a whole, appears to be an old one in the stage of organization, that is, it shows a tendency to cure. In these cases there are no pustules or abscesses in the skin, kidneys or heart, and no infected suppurating infarctions. The numerous infarcts in the kidneys and spleen are pale and dense, and the foci of softening in the brain are not suppurating, although the emboli causing them were detached from vegetations from an infectious endocarditis, loaded with bacteria. The kidneys are in a condition of acute or subacute parenchymatous or hemorrhagic nephritis. Bacteria are rarely found and the cause of the condition is probably a toxic one, secondary to the endocarditis; no rigid line can, however, be drawn between the two classes, since some cases due to streptococci or pneumococci run an acute course, while cases due to the staphylococcus may, though rarely, run a chronic course. They may also approach each other in their other clinical symptoms as well as in their pathological appearances.

Among the non-infectious cases of endocarditis he examined six occurring in acute rheumatism, in all of which a crop of small, warty excrescences was found along the line of closure of the valves, but never ulcerative or diphtheritic patches. Bacteria could not be demonstrated even by culture. These negative results were of interest since they failed to demonstrate either the microbes which have been claimed to be specific, or the attenuated forms of the ordinary pus products to which etiological importance has been ascribed. In nine cases of tuberculosis warty or polypoid growths were found in the valves, but the cultures were sterile in them all. In one instance a few tubercle bacilli were found in a cover-glass preparation, and in two others guinea-pigs died after inoculation with the valvular excrescences, but the causal relation between the endocarditis and the tubercle bacilli is very doubtful.

He has also found in other diseases, Bright's, carcinoma, etc., excrescences in the line of closure of the valves, without being able to discover any bacteria, so that it still remains to him an unsolved problem, whether to ascribe them to one or more infectious agents or to a form of chemical action from abnormal metabolism.

VESICAL ASTHMA.

Under this head Pawinski[10] reports several cases of paroxysmal dyspnea occurring in elderly men whose enlarged prostates had led to the accumulation of residual urine in the bladder. In every case there were changes in the circulatory and respiratory apparatus, such as arterio-sclerosis and emphysema. They were usually, however, to be regarded as incidental to age rather than as real pathological conditions, although in a few the pathological changes were more marked, as shown by the presence of a chronic myocarditis or valvular lesions. Treatment of these conditions failed to cure, while the effects of catheterization were so conclusive that it was impossible to doubt that retention was the cause of the trouble. He lays much less stress on reflex action than on auto-intoxication in explaining this relationship, as he believes the latter to be responsible in a majority of cases, from the similarity of the symptoms to those accompanying other cases of self-poisoning; a bladder wall which is no longer sound, owing to the prolonged retention of urine, being capable of absorbing toxic substances.

[10] Rev. de Méd., March 10, 1899.

BRONCHITIS AND ARCHITECTURE.

Gee[11] says, in conclusion of the Lumleian Lecture on bronchitis and allied disorders, that it is highly probable that most catarrhs are due to a specific infection and are often dependent on contagion from man to man. The means of prevention are therefore to be found in ventilation and cleanliness, if, indeed, ventilation is not a form of cleanliness. Patients catch their catarrh either in badly ventilated houses or in buildings where men most congregate, especially in offices, shops and churches. Large shops, museums and libraries are purposely unventilated to prevent the injury of their contents by dust or smoke, while churches are never properly aired because their architecture does not admit it. The revival of Gothic architecture has been, from the sanitary point of view, a great mistake, and modern dwellings are no better than the churches. In domestic sanitation people have fixed their attention too exclusively upon drainage and the water supply; light and air are not reckoned. The well of the staircase ought to be a reservoir of pure air and to have an independent supply from without, yet in most houses it is ventilated only through the rooms, in fact is not ventilated at all, while the rooms themselves are not much better off. The subsidiary and merely ornamental arts, which do no more than please the eye, are studied to the neglect of that far greater art which promotes the happiness and welfare of the whole man, the art of preserving health.

[11] Lancet, March 18, 1899.

DISPLACEMENT OF THE HEART IN PLEURAL EFFUSIONS.

From a careful study of a number of cases of pleural effusion by percussion, auscultation and the radiograph as well as by experiments on the cadaver Carrière[12] arrives at the following conclusions: In left-sided effusions cardiac displacement almost invariably occurs, but if the effusion be less than one litre and more than 700 grammes the apex maintains almost its normal situation, save that in the vertical position or in the right lateral decubitus it is lowered from two to four centimetres and tends to approach the median line. When more than one litre has accumulated the heart is so displaced that its long axis tends to become vertical, while the apex is lowered and moved toward the right, until in the presence of two and a half to three litres it is found in the neighborhood of the xiphoid cartilage. With more than three litres of fluid present the heart is moved *en masse*, together with the mediastinum, toward the right, but it remains vertical with the apex near the xiphoid. Twisting of the heart on its axis is never observed.

In right-sided effusions under one litre there is no cardiac displacement, except that with the patient in the vertical or left lateral position the apex is displaced two to four centimetres to the left; with more than one and less than three litres present the apex is displaced from three to eight centimetres. With larger amounts the displacement does not exceed ten

[12] La Presse Méd., December 17, 1898.

centimetres. Double effusions lower the heart *en masse* and tend to straighten its axis.

DISPLACEMENT OF HEART IN PLEURISY.

Pitres[13] in a short note says that he has been led to the somewhat paradoxical conclusion that displacements of the heart in pleurisy, far from being a source of danger to the patient, should be regarded as a providential proceeding to protect the central organ of circulation from the increased intrathoracic pressure. A pleural effusion exercises an eccentric pressure in all its surroundings, while the mediastinal displacement has the effect of moving the heart *en masse* and not by a movement of rotation on its axis, which is anatomically impossible. The acting agent in protecting the heart is the pericardium with its solid attachments above and below. An effusion into the pleura lowers the diaphragm, which draws in the pericardium, rendering it tense and vertical, thus displacing the heart and giving an opportunity for the auricles to function, etc. In a bilateral pleurisy this mechanism is not possible, hence its danger.

Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

TWENTY-FIRST ANNUAL CONGRESS, HELD IN CHICAGO, MAY 22, 23 AND 24, 1899.

FIRST DAY.— MORNING SESSION.

PRESIDENT'S ADDRESS.

THE President, WILLIAM E. CASSELBERRY, M.D., of Chicago, delivered the following address:

The honored custom of an address from the chair affords opportunities for suggestion looking to the welfare of our organization and of the department of medicine which it represents which would not find expression in any set paper or formal discussion. I think all are conscious of the change in the drift of laryngological practice wrought of recent years, first, by the evolution of nasal pathology, and secondly, by the appropriation of the ear. From a physician treating affections of the throat and chest, the laryngologist is fast becoming a surgeon with a routine of practice limited to local measures as applicable to the upper respiratory tract alone. While freely conceding progress has been realized along local surgical lines I deprecate the tendency of the day to deal with the throat and nose exclusively in a mechanical way as if they were organs detached. I believe it engenders narrowness of thought, and that, through habitual disuse, there is gradually lost to the physician much of that fundamental knowledge of pathology and applied therapeutics which is so essential to the welfare of the patient. There are now nasal enthusiasts whose idea of the subject entire seems to consist in the establishment of a wide patency of the nostrils.

The intimacy of the ear with the throat and nose is conceded. The laryngologist has the treatment of aural affections actually thrust upon him. Even the patient's discernment convinces him that the laryngologist's skill and equipment are the means best adapted to the end. And having appropriated the ear one should cultivate an exhaustive knowledge of the organ, but as an addition to laryngological lore, not as substitute for a part thereof. Aural enthusiasts have developed among laryngologists whose commendable studies of the ear have been a help but who centre their attention so forcibly upon that organ as to convey the impression of neglect of fundamental laryngological precepts.

Add to these our *confrères* in smaller towns who find it expedient to group together the eye, ear, nose and throat and we encompass numbers who to-day are posing as laryngologists whose education, interests and restricted routine of practice put them out of touch with important medical and systemic phases of the subject.

Do latter-day laryngologists as a class habitually endeavor to establish the real diagnosis in the earliest demonstrable stage of pulmonary tuberculosis? Are not such patients liable to come first before us with their irritable throats, hacking cough, tendency to hoarseness and inclination to rhinitis?

It is not claimed that the laryngologist must of necessity embrace in his practice all pulmonary diseases — that is a matter of choice and expediency; but it is urged that he be ready to apply all the arts of diagnosis and that he be conversant with every resource known to medicine in the treatment of pulmonary conditions for the benefit of cases of laryngopulmonary tuberculosis, laryngobronchitis, bronchial asthma in association with ethmoiditis, and other conjoined pathological conditions of the upper and lower respiratory tracts.

Nor will it answer to omit attention to the heart, aorta and mediastinal contents. Paralysis of a vocal cord through pressure on the recurrent nerve by an aneurism is a simple proposition, but more complicated ones which require a high degree of diagnostic skill are continually encountered.

Regarding the treatment of pulmonary conditions, especially tuberculosis, cases which are not complicated by affection of the throat are naturally claimed by the department of internal medicine. It is not possible, nor even desirable, to draw an absolute line at this point between laryngology and internal medicine; in practice they are bound to overlap, but conceding that if drawn anywhere it would be here, there remains a considerable proportion of pulmonary cases in which the upper respiratory tract is so far implicated that they fall naturally under the care of the laryngologist. Hence, as before said, he should be conversant with every resource known to medicine in the treatment of pulmonary states. He should be a good systemic therapeutist and continue to cultivate the art of prescribing, realizing the uses as well as the limitations and abuses of internal medicine. Above all, one should study the conditions of natural immunity and susceptibility in order that having made an early diagnosis one may direct the mode of life and place of abode best adapted to arrest the disease and overcome the susceptibility. This implies a ready familiarity with sanitation, hydrotherapy, climatology and sanitarium resources and methods. We get little convincing information concerning climatic effects upon laryngeal tuberculosis. While Heryng, Krause, Gleitsman and others have demonstrated the value of surgical measures in suitable cases of laryngeal tuberculosis, there are yet so many which are unsuitable for this line of treatment that one turns with gratification to the reports of Solly and Levy from the Rocky Moun-

[13] La Presse Méd., April 24, 1898.

tain region to find that unmistakable laryngeal tuberculosis in the proportion of 20 per cent. recovers in that climate, and that another 20 per cent. lives along indefinitely, greatly improved. Carefully studied reports from other resorts would be welcome and laryngologists at large should thoroughly familiarize themselves with the principles of climatology in order to intelligently serve their patients.

In connection with bronchial asthma, studies in nasal pathology have furnished gratifying information concerning the associated polypoid changes in the ethmoid region, and they tend inferentially to establish a vasomotor defect as the common cause of both the nasal and bronchial symptoms. Pronounced relief and often a practical cure may be effected by nasal treatment. This the laryngologist is much more likely to secure if he show himself willing and ready to assume full charge of the case, attending not only to the nasal surgery but exhausting the pharmacopeia and climatic resources to bring the fullest measures of cure or relief.

For a familiarity with bacteriologic technique there is a constant need in the practice of laryngology. The hunt for the Klebs-Löffler bacillus is already popularized. The search for the Cannon-Pfeifer bacillus of influenza and for the micro-organisms of pneumonia should be reduced to the same practical basis. "We will be raised in our esteem in the degree that we add a little more science to our art."

All laryngologists are familiar with the many throat conditions which appear as salient features of underlying systemic states and yet in the overswing of the movement toward localism general pathological data, systemic therapeutics and hygienic aids are not always utilized to the utmost. How often is edema of the larynx merely secondary to chronic nephritis, and laryngeal ictus simply the forerunner of locomotor ataxia? Indeed I might enumerate indefinitely associated throat and systemic states, but I have said enough, I think, to support the contention that the laryngologist should continue as of old to be first of all a good physician and after that something more, a specialist.

Nor need a man with this breadth of view be any less skilled in the operative technique of tonsillotomy, in the correction of deviated septa, the surgery of the collateral sinuses and the mastoid operation. He can appreciate the disadvantage of nasal obstruction just as well as another who perceives that only.

Let us profit by each other's experience, search along liberal lines and endeavor to realize Emerson's conception of power: "A cultivated man, wise to know and bold to perform, is the end to which nature works."

Dr. J. W. Farlow, of Boston, read a paper entitled

IS THE SO-CALLED "AMERICAN VOICE" DUE TO CATARRHAL OR OTHER PATHOLOGICAL CONDITIONS OF THE UPPER AIR PASSAGE?

By "American voice" is meant the characteristic nasal twang so commonly noticed in Americans. Conditions of the larynx and fauces which cause their own distinctive vocal impairment are not here considered. We do not mean by the term "American voice" the thick voice and that of low carrying power. Any condition which hinders the passage of air into the nose tends to diminish the nasal resonance, and does not contribute to the production of the nasal voice.

Where we have anterior septal deviations and spurs, the air during vocalization vibrates abnormally in the nasal chambers; so also when the nose is narrowed at the tip, and where we have anterior polyps or anterior turbinal enlargements. Frequently is seen chronic catarrhal inflammation of the mucosa without hypertrophy. From all these causes there results anesthesia and paresis of the soft palate, and some tones which should be formed in the mouth are formed higher in the nasopharyngeal space. This explains the occurrence of the nasal twang after operations for the removal of adenoids, which is apt to persist until the palate has regained the tonus lost from disuse. Atrophic rhinitis does not seem to cause a nasal voice.

It is convenient to classify our patients for purposes of this study into those up to twelve years, those between twelve and thirty, and those above thirty. In the first class the nasal voice is common, but the lesions enumerated above, which might seem to stand in a causative relation thereto, are not common. In the second class these lesions are more common than in the first class, but the occurrence of the nasal voice is not more common, and does not appear, therefore, to have any constant relation with the apparent formative causes. In the third class the nasal voice is less common than earlier in life. From the foregoing considerations, it is obvious that the nose is not the determining factor in the formation of the nasal voice, because the nasal lesions do not determine the classification into nasal and non-nasal voices. The voice can often be improved by training without any medical or surgical interference, and pathological states have more to do with the range and power of endurance of the singing voice than with the quality in the medium register. The nasal voice is more often a matter of imitation. Good public speakers and actors often have poor vocal organs from a purely anatomical point of view.

Anterior obstructions are common in all civilized races. Some of the most pronounced nasal voices are heard in country villages. In the United States the great influx of foreigners has introduced all sorts of vocal sounds into common speech, and we are quite indifferent to the best methods of speaking. Hence, children should be carefully trained in this respect — for in them imitation of the vicious vocal methods they constantly hear is the most potent factor in the production of the nasal voice. Every fall our daily papers are filled with the advertisements of singing-teachers, but for every one who aspires to sing there are one hundred who use the voice for conversation only. These latter are content to speak after the manner of the community in which they live, and no thought is given as to whether this is a proper manner or not.

Dr. G. Hudson Makuen, of Philadelphia, opened the discussion. He said that far more attention should be given to proper methods. As a rule, physicians know little about the subject. Laryngologists should instruct singing-teachers. The "American voice" is due to the excessive tension of our modern life. We should cultivate the gospel of relaxation, for our "push," so called, is fast getting to be a national calamity. The active anatomical factor in nasal voice is probably a low-hanging palate during speech. The sound vibrations are centered in the post-nasal space. We must train the levator palati muscles, which can be done by having the patient

practise several times daily with open mouth before a mirror.

DR. L. AMORY DE BLOIS, of Boston, thought that racial condition had much to do with the character of the voice. We are all familiar with the guttural of the German, the vibratory nasal French voice and the high-pitched voice of the Yankee, while the English voice, no matter what the social rank, is always of an agreeable, low pitch.

DR. JOHN O. ROE, of Rochester, said that the nasal sinuses had much to do with voice production, as they act as resonators. The voice depends on the size of the cavities and on their shape, both of which vary greatly. Anterior nasal obstruction does not cut off the influence of the resonators, while posterior obstruction does. So, also, the peculiarities of the various languages are a factor. Those who use many consonants, as Germans and Russians, have low-pitched voices, while an excessive use of the vowels, as in French, conduces to the opposite result.

DR. A. W. DE ROALDES, of New Orleans, spoke of American conversational habits, and of the fact that in the South the conventional voice tone was much lower than in the North. This might be due partly to a mixing of various race bloods in the former section, and to the lazier mode of life. The negro voice was not much addicted to tonalities.

DR. THOMAS HUBBARD, of Toledo, thought that much of our high-pitched speaking was due to the noise of our American cities, where it was often necessary to speak in a loud, high tone in order to make one's self heard. So, also, the ear becomes, from its noisy environment, obtunded to the appreciation of such misuse of the voice.

DR. FARLOW said that the low palate was often due to lack of use, but was not the original cause of nasal voice. It was secondary and not primary in its causative relation. As to the influence of the sinuses, he said that nasal voice was common in children in whom the sinuses were scarcely at all developed. English is spoken in many countries, in none of which does the voice have the same qualities as in this country. Voice is not, therefore, primarily a matter of language. As to city noises entering into the question, he had often noticed the most pronounced cases of nasal twang in country villages.

DR. JAMES E. NEWCOMB, of New York, read a paper on

ADENOCARCINOMA OF NOSE, WITH REPORT OF CASE.

Allusion was made to the fact that two cases of this nature had been reported to the Association two years ago, and that up to that time there were on record the notes of twenty-three similar cases in which the clinical diagnosis had been verified by microscopical examination. The writer's case was that of a woman aged sixty-one years of age, a widow of American parentage, who had suffered since June, 1898, with obstruction of the left naris, and almost daily nose-bleed. The latter had been severe on one or two occasions, but had never required any operative interference At times there had been a slight watery discharge with a slightly offensive odor. She had lost some flesh and strength. In September last she had blown from that side of the nose what she described as a "fleshy bean" and which was probably an ordinary polyp.

The left middle turbinate was found considerably enlarged, and the mucosa over it seemed to be in a condition of polypoid degeneration. About it were some fleshy proliferations, which bled easily upon manipulations with the probe. There were no glandular enlargements and no pressure symptoms. The masses were removed under cocaine anesthesia without incident. The report of the microscopist was adenocarcinoma. Radical interference was refused by the patient.

In looking over the literature of the subject during the last two years, Dr. Newcomb had been able to find the records of six additional cases. Cancer of the nose is relatively rare. Gurit was able to find only four cases out of a total of 9,554 cases of cancer of all organs. It is claimed that there is nothing more than coincidence between the association of the ordinary polyp with carcinoma. Tissier, who has written at length upon this phase of malignant disease, does not believe that the epitheliomatous degeneration of simple polypi has ever been definitely proven. What we know, he says, about the etiology of polypi explains their occurrence in a cancerous nasal fossa. On the other hand, Plicque states that it is pretty frequent after the ablation of numerous benign polypi, to find new polypi appearing composed this time of epitheliomatous tissue. Dr. Newcomb could hardly accept the truth of the latter statement, for polypi were very numerous and were often removed by very crude means, while the occurrence of cancer here was so rare.

Mention was also made of a surgical procedure proposed by Dr. Dawbarn. It consisted of the ligation on both sides (a suitable interval occurring between the two operations) of the eight branches of the external carotid artery and the excision of the entire trunk of this vessel in the attempt to starve the growth by shutting off its blood supply.

DR. GEORGE WOOLEN, of Indianapolis, related the history of a case of malignant disease of the nose occurring in a girl of eight years, following an injury received two years before. Nasal polypi, so-called, were removed and pronounced by the microscopist to be non-malignant and only simply mucoidal in character. Pressure symptoms were prominent. The growth was found to recur over an increasing area and the case was pronounced to be non-operable. The later clinical history clearly demonstrated the fact of malignancy.

DR. J. L. GOODALE, of Boston, mentioned a case of adenocarcinoma of the nose occurring in a man of fifty-one years. The left naris was filled with a soft bleeding mass, showing after removal and examination a fibrous stroma with epithelial cell nests. There was bulging of the eye, much pain and nasal obstruction. Removal was followed by recurrence.

DR. NEWCOMB, in closing the discussion, urged hearty co-operation and association of the clinician with the microscopist in the management of cases of doubtful nature in their incipiency.

(To be continued.)

A THIRD ATTACK OF TYPHOID FEVER. — M. Pérochaud (*Gazette médicale de Nantes*, July 22d) records a case of a third attack of typhoid fever in a man forty-eight years of age. The attack proved fatal. — *New York Medical Journal.*

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THE REPORT OF THE PAUPER INSTITUTIONS TRUSTEES.

THIS document is of more than usual interest, owing to the active development which has been going on of late in the institutions of Boston devoted to the care of the dependent poor. As most of our readers know, there has been a vigorous attempt made during the last few years to raise the institution at Long Island out of the level of a mere asylum for the non-insane, but destitute and inefficient, part of the population into a position of dignity and significance from a broadly medical as well as charitable point of view. To this end, so far as the hospital side is concerned, a staff of visiting physicians has been appointed, who make medical visits as frequently as the somewhat unsatisfactory boat service permits, and whose aim it has been to establish the methods of well-organized hospital routine in the diagnosis of disease, and in the care of the patients under their charge. A training school for nurses, to which we have before had occasion to refer in these columns, has been established, and is rapidly developing into a success. Out of an almshouse hospital, with but scant medical attendance, has grown a hospital, to which the public at large and the medical profession may rightly look for practical work of a high character, and, it is hoped, later for researches of value. The opportunity in this last line, that of original scientific research, lies unquestionably in the very fact of the chronic character of the diseases there under observation. The material is there; the enthusiasm for research only is lacking, a spirit which, no doubt, it will require time and precedent to establish. In the meanwhile it is well to remind our readers that such a hospital exists near at hand, whose function it is to treat persons suffering from chronic forms of disease and to study their diseases by modern methods.

The report before us is interesting in many ways, and first from the admirable consideration of the problem of pauperism, or, in last analysis, the problem of physical and mental incapacity, which it is quite within the province of the broad-minded physician to investigate. The "rounder" question is taken up and the intention expressed of studying even more carefully than has yet been possible the manifold causes which lead to this repeated passage of certain persons through the various public institutions. Statistics of much interest are brought to bear upon the subject, but it is clearly a matter, like many other social evils, which will require a long period of painstaking study before broad conclusions may be drawn. To the physician the questions of alcohol and syphilis are all-important in this connection, for to one or the other of these two causes may certainly be attributed much of the degeneracy and incompetency everywhere observable, but particularly conspicuous in an institution devoted to the care of those who through excesses of various sorts are brought to a condition of absolute dependence. It has somewhere been remarked and is always a significant fact that the difference between the degeneracy of the pauper and of the well-born is rather one of appearance than fact. Precisely the same influences permeate society at large and it is merely chance circumstance which makes conspicuous the disgrace of the one and shields the downfall of the other. The broadly human problems which an institution like Long Island presents certainly reach from the top to the bottom of society. Because our opportunities for study are solely at the bottom in no way alters the fundamental problem. It is clearly the intention of the trustees to work out the problems which the institution offers, as a glance at their report shows. For example, the detailed histories of three families are given in the form of tables, which must be of great interest to the student of degeneracy.

Regarding this matter, the report says:

"One cannot look into the antecedents of an almshouse population without coming across some of the tangled and interwoven threads of pauper and semi-criminal and defective relationships. Three such instances are given, one of which leads back to a home in the old Crystal Palace building on Lincoln Street. It is only in retrospect that we get full sight of the ramifications from such centres of degenerate life; although they should not be accepted as representing frequent conditions, it is worth while to study them with care, so that if possible in the case of persons of similar tendencies now coming into and going out of the almshouse, through the full co-operation of all municipal, educational and philanthropic organizations which touch these lives at any point, we may set some check to the contagion. There is already a natural check to it, if we can trust the general evidence of our records, as an examination of the cases of pauperism in the second generation shows a tendency to elimination by infertility and early death."

All these matters we maintain are so intimately associated with the general health of the community that they become medical as well as social problems.

Turning, however, to that part of the report which concerns itself chiefly with the strictly medical side of the work, we find a highly encouraging outlook for

the future. The visiting medical staff reports progress in every direction, which has been due in great measure to the hearty co-operation it has received from the trustees, superintendent and resident medical staff. With all the difficulties attending the care of the class of patients of which the hospital is largely composed, an excellent degree of discipline has been attained, and a distinctly hospital spirit introduced.

In the words of the report, "No one thing has conduced more to orderliness than the commitment to proper hospitals of noisy and troublesome insane patients. The policy has been to transfer those persons who, through their disordered mental state, have interfered with the welfare of non-insane patients, thereby relieving the hospital of patients for whom it is not intended and also assisting toward a proper classification of the dependent poor." It would seem to us altogether desirable that this policy be consistently carried out. The principle is undoubtedly sound, and it is the duty of the city to provide accommodation in all cases for the troublesome insane, in institutions where they will be neither a menace nor a disturbing element to patients who are not mentally affected.

It is also of interest to note the fact that since the introduction of adequate methods of infant feeding the deaths due to digestive disturbances have been reduced to one-quarter of what they were, a result perhaps partly due to the equipment of a sunny nursery. During the period immediately after the war with Spain one hundred and twelve soldiers were treated, with no deaths.

The visiting staff in concluding their report make the following statement: "In conclusion, we beg leave to state that, in our opinion, one of the most pressing medical needs of the city is a properly appointed hospital to which those suffering from incurable disease may be sent. This need the Long Island Hospital should supply more completely than is at present the case. To this end we hope that in time persons may be admitted to the hospital for temporary or permanent treatment, without the stigma which attaches to the name of pauper. Could this be accomplished, we feel sure that the range of usefulness of the hospital would be materially extended."

SCIENTIFIC STUDY OF PHYSICAL TRAINING.

IN our issues of August 31st and September 7th was published a paper by Dr. Eugene A. Darling, on "The Effects of Training. A Study of the Harvard University Crews." We desire to call attention not so much to the details of Dr. Darling's interesting investigation, for which we would refer our readers to the original paper, as to the significance of such studies in general with reference to the highly important matter of athletic training.

As in every other question which excites much public attention, there have been two fairly well-defined points of view regarding the effects on the participants of athletic contests requiring a high degree of skill and muscular effort. The enthusiast for sport has strenuously maintained that only good results to the individual and to the general cause of physical development. The more conservative, but often no less interested, believer in athletic sports has urged that the training incident to one of our great college contests is inconsistent with physiological laws and, on the whole, is harmful rather than helpful to the individual, and hence to the general cause of athletics. Both of these opinions have no doubt been sincerely held, and many theoretical arguments have from time to time been adduced in support of one or the other view. The point of interest, however, is that a matter capable of approximate demonstration has been so long neglected, and no really scientific study made of the men undergoing training, to determine the actual results of the contests upon their bodily processes and organs. It is clearly a matter about which it is useless to theorize when certain definite facts may readily be determined. When facts are exhausted, theories may be in place, but not before.

It is for this reason that Dr. Darling's investigation is of great significance. He has had the opportunity of studying a body of highly trained men both before and after a contest requiring a high degree of skill and muscular endurance and has tabulated his results. He has found that certain changes in the circulating apparatus and excretory organs are easily demonstrable by means of the methods of physical diagnosis now at the disposal of any well-educated physician. The positive results he has given us are of the greatest importance in themselves and as a basis for further investigation, and the way has thereby clearly been opened for a substitution of fact for theory. Williams and Arnold have also done valuable work in the same line in determining certain physical conditions resulting from long-distance running. The methods which these investigators have adopted need merely to be extended, as Dr. Darling admirably points out, until we have a science instead of a theory of physical training. There is here evidently a field for much good work. The metabolic processes must be studied; the excreta examined chemically, the manifestations on the part of the nervous system closely scrutinized; statistics extending over years must be compiled and compared, and when all this is done we may frame our theories. Unquestionably the greatest need of the present is to tabulate exactly the physiological effects of training and of violent athletic contests, in order that we may as soon as possible get at a criterion, which will bear scientific analysis. This is certainly possible, and such work as Dr. Darling has just published does much to hasten the day. That it has been so long in coming is undoubtedly a reproach to our methods of physical training hitherto in vogue, and should be a stimulus to renewed work along these lines in the future. We have no doubt that many obscure questions will thereby be settled.

MEDICAL NOTES.

THE YELLOW-FEVER SITUATION. — No new cases of the disease have developed at New Orleans. Cases at Mississippi City are reported as mild and doing well. At Key West up to a few days ago there had been 135 cases and 10 deaths. Several passengers on the steamer *Lampasas*, from Galveston and Key West to New York, have shown suspicious symptoms, and one has developed the disease. In Cuba during the month of August there were 55 cases and 20 deaths.

DEATH-RATES OF ABSTAINERS AND DRINKERS. — According to the *Medical Record*, of 4,234 deaths collected by the British Medical Association the ages of death in classes were registered, together with the cause, and the average of death for each class computed with the following result: Total abstainers lived on an average 51.22 years. The habitually temperate class lived on an average 62.13 years. Careless drinkers lived on an average 59.67 years. The free drinkers lived on an average 57.59 years, while habitual drunkards lived on an average 52.03 years.

HOSPITALS IN THE PHILIPPINES. — In view of the increased army now being sent to the Philippines, we learn from the *Medical News* that Surgeon-General Sternberg has issued orders for an increase of the medical department and hospital accommodations at Manila. As six months is required for building a large wooden hospital, it will be necessary to depend either upon tent hospitals or upon buildings already constructed which may be obtained for the purpose, so five hundred hospital tents have been ordered. Two hundred and fifty members of the hospital corps will be sent on the *Missouri* and twenty female nurses on the *Relief*. Four experienced surgeons of volunteers, with the rank of major, are now under orders for Manila in addition to the commissioned medical officers belonging to the new volunteer regiments.

BOSTON.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, September 13, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 60, scarlet fever 14, measles 6, typhoid fever 38.

NEW YORK.

IMPROVED BUILDING LAWS. — The members of the Tenement House Commission which was appointed in 1894 to study the field of tenement house construction and report to the Legislature, and whose recommendations were later embodied in building laws, have expressed the unqualified opinion that the new building code of the City of New York, which has just been prepared by the Building Code Commission, will tend to improve the construction of tenement houses as well as of other buildings. The reduction in the thickness of walls and of floors, rendered possible by the improved methods of construction now in use, which the new code permits, is regarded as an advantage in tenement houses, and the section of the code applying to fire appliances is looked upon as especially advantageous for tenements.

CHARGES AGAINST THE SOCIETY FOR PREVENTION OF CRUELTY TO CHILDREN DISMISSED. — Albert Stickney, appointed referee by the Supreme Court to inquire into the charges of mismanagement preferred against the Society for the Prevention of Cruelty to Children, has filed a voluminous report in which he sustains in every instance the claims and defence put in by the Society, and praises its management in the highest terms.

A DINNER FOR NAVAL PHARMACISTS. — The Manhattan Pharmaceutical Association is making arrangements to give a banquet in honor of the pharmacist of the *Olympia* at the time of the Dewey celebration, to which the pharmacists of Admiral Sampson's escorting fleet are to be invited. The *Olympia's* pharmacist is said to be the youngest officer of his grade in the service. In June, 1898, a bill was enacted providing for the appointment of twenty-five pharmacists, with the rank of warrant officers. These appointments were made from among the senior apothecaries in the service, with the exception of the apothecary of the *Olympia*, who, for distinguished services, was promoted to this rank, although he had been in the service only about ten years.

DEATH OF SISTER CONSALVA. — Sister Consalva, who was for thirteen years the Mother Superior of the Sisters of St. Francis of the Poor in charge of St. Peter's Hospital, Brooklyn, died at the hospital on September 4th. When she became Mother Superior of the Sisters at St. Peter's that institution was located in a small frame building, and it was chiefly through her efforts that the fine structure now occupied by the hospital was built. She was a native of Germany, and sixty-seven years old.

Miscellany.

PUBLIC MONEY FOR PRIVATE CHARITIES IN NEW YORK.

ON September 7th Controller Coler presented in the Board of Estimate and Apportionment a resolution embodying the terms and conditions on which he thinks it advisable that any public moneys appropriated from the city's budget for the support of private charities should be dispersed. Accompanying it was an exhaustive report on the general subject of such appropriations, to which the controller has been devoting so much attention in the last few months. In it he gives expression to the belief that the best results will be obtained if the Board of Estimate will decide upon a policy which should first decide clearly the relations to be established between the city treasury and private charitable institutions, and then move toward that end by gradually conforming the appropriations in the budget to that ideal in such a manner that progress shall be made as rapidly as may be consistent with the desire to avoid crippling excellent charities which have

been led to depend for many years upon public assistance.

The city's appropriations for paupers in private institutions increased from $1,845,872 in 1894 to $3,131,589 in 1899, and in view of the additional responsibility placed upon the Board of Estimate by the Stranahan Act, the controller says, he made a thorough investigation of the existing conditions. All institutions receiving public moneys were requested to submit sworn statements as to their work and finances, and these, together with special reports from the State Board of Charities, the State Charities Aid Association, the Charity Organization Society and the New York Medical League, accompany his report. A considerable portion of the latter is devoted to medical charities, in which the present system finds its greatest abuses, and in commenting on this topic Mr. Coler says, in part:

"While sometimes overcrowded, it frequently happens that the city hospitals are not filled to the limit of their capacity, and it would seem as though the city should not deal with private hospitals except as subsidiary aids or adjuncts to the public institutions. It stands to reason that as long as there are vacant beds in the city hospitals, and the city is at the same time subsidizing private hospitals at a cost greater than the expense of caring for patients in its own institutions, a wrong is done to the taxpayers. If private hospitals are to receive public assistance at all, it would certainly seem that payments should be made only at some uniform rate approximately the same as the cost *per capita* of maintenance in the public institutions (not including the cost of general administration, which would be constant in any event)."

The appropriations for dispensaries for next year, he recommends, shall be limited to one-half the amount appropriated in 1899.

THE ETIOLOGY OF BERI-BERI.

THE *British Medical Journal* refers to an interesting contribution to the subject of beri-beri, in which Dr. Laurent gives an account of a sharp epidemic of this disease which attacked the Annamite soldiers forming part of the French troops of occupation of Chautabun (Siam). Acting on the view of Dr. Brémaud that fat plays an important part in the prevention of beri-beri, steps were taken to include this important article of diet in the rations, and in forty-eight hours the epidemic was arrested. That the absence of fat in the dietary is not the sole factor in the production of the disease was proved by the fact that one of the worst cases occurred in a Frenchman, but he was the only European attacked, and rapidly recovered on removal from Chautabun. This case would point to an infectious factor. On his return to Saïgon, Dr. Laurent had an opportunity on the voyage of visiting the island convict settlement of Poulo-Condore, where he found beri-beri very prevalent — in fact, there had been 360 deaths from it in the year, and there were no fewer than 160 cases under treatment. His experience of the influence of fat on the course of the Chautabun epidemic led him to recommend its trial, with beneficial results. Commenting on the foregoing, Dr. Brémaud refers to his experience of the Poulo-Condore Settlement in 1877–78, when the cutting off of fat in the dietary of the convicts was followed by a severe outbreak of beri-beri with many deaths. The epidemic immediately ceased when the original fat-containing diet was resumed. Dr. Brémaud also observed an outbreak on board the English vessel *Ilione* in 1879, whilst in charge of a consignment of coolies shipped from Pondicherry to Martinique. During the voyage, which lasted four months, Mohammedans only were affected by the disease. On religious grounds they systematically abstained from fat (pork). The other coolies who partook of the pork escaped. These facts certainly point to the importance of fat, and there should be no difficulty in putting the views of the French observers to the test. In this connection it would be interesting to know what part fat formed of the dietary of the Richmond Asylum, Dublin, before the appearance of beri-beri there. There can be no doubt that suet, dripping, fat pork, the fat of milk, and so forth, are most valuable articles of diet, and their exclusion from the dietary a fruitful factor in the development of rickets, tuberculosis, and possibly of leprosy also.

HOSPITALS AND MATRIMONY.

THE *Medical Press and Circular* very sensibly comments as follows on the relation between nurses and medical officers in institutions where they are naturally much thrown together.

"A discussion which ought by rights to have been relegated to the silly season has been carried on in one or more of the New York newspapers concerning the matrimonial propensities of the nurses employed in the large general hospitals of the metropolis, though it is not pretended that the practices complained of are by any means limited to this *milieu*. The allegations in the main do not impugn the morality of the nursing fraternity, or shall we say sisterhood, but it is asserted that nurses and doctors 'flirt and carry on,' and that many nurses regard the hospital as a field for the matrimonial campaign. There is doubtless a certain amount of truth in this, for most of us can call to mind numerous instances of marriage between medical residents and nurses and even between nurses and their patients. Whenever a young man of prepossessing appearance is brought into daily and even hourly contact with a comely young woman, shown to advantage in a neat attire, who is not on principle averse from matrimony, there is always the possibility, *Dieu merci*, of a matrimonial sequel, and although a hospital ward is not an ideal *milieu* for Cupid's ravages, the very community of purpose and emotions paves the way to tenderer feelings. The rules at most institutions err, if anything, on the side of severity in the direction of repressing and reproving any intimacy between medical officer and nurse, but though they may hinder flirting pure and simple, neither they nor any rules that female ingenuity, as represented by the matron, may devise can be relied upon to stamp out this very human instinct — nor should we approve them if they did."

THERAPEUTIC NOTES.

TREATMENT OF MASTITIS BY INTRAGLANDULAR INJECTIONS OF CARBOLIZED WATER. — Dr. W. Rubeska,[1] professor of obstetrics in the School of Mid-

[1] Bulletin Général de Therap., July 30, 149.

wifery at Prague, adopts the following treatment for mastitis in nursing women. As soon as an inflammatory infiltration of the gland is detected the nipple is thoroughly disinfected, and compresses saturated in a 0.5-per-cent. solution of sublimate are applied to it for two hours. Then the excess of milk in the breast is drawn off by aspiration and an ice-cap applied over the breast. When the mastitis begins with a chill followed by fever and severe pains, an injection is at once made into the depth of the parenchyma of the infiltrated organ of two or three cubic centimetres of a three-per-cent. carbolized water. If the beginning of the affection is less pronounced, then the injections may be made on the next day, in case the fever and the pains do not subside. Out of 16 cases in which Rubeska employed this method of treatment, the formation of an abscess was avoided in 14; the temperature became normal on the same day when the injections were made, and by the following day the inflammatory infiltration began to disappear rapidly. In some cases it became necessary to repeat the injection a second or even a third time, on account of the formation of fresh inflammatory points in the same breast or in the opposite one.

The Treatment of Pleurisy by the Local Application of Guaiacol.— Prosoroffsky [2] treated 11 cases of pleuritic effusion by the local application of guaiacol over the skin of the affected side; he finds that the absorption of the effused fluid takes place more rapidly than when any other method is employed, without causing any inconvenience to the patient. The applications are generally repeated six or seven times, after which a fall in the temperature is noted from one to five degrees F., although it rises again in a few hours. The action of guaiacol is explained thus: First, an effect is produced on the peripheral nerves which influences appreciably the vasomotor centres, and secondly, the guaiacol being absorbed by the tissues destroys the noxious agencies elaborated by the pathological process in pleurisy.

Cardiac Medication in the Treatment of Epilepsy. — Bechterew [3] recommends the addition of adonis vernalis to the potassium bromide in the treatment of epilepsy, and refers to a case in which this mixture was employed with success in an adult who was to be subjected to a trephining. In certain cases, which he does not specify, he finds it more advantageous to substitute the adonis by infusion of digitalis, thus, infusion of digitalis 0.5 to 0.75 in 180 of water; potassium or sodium bromide, six to eight parts; codeine, 0.15 to 0.20; of this five to eight teaspoonfuls during the day. No cumulative effects have ever been observed. This therapeutic indication may be explained by the cardiac aura, by the acceleration of the pulse during an attack of epilepsy, by the diuretic effects of the drug, which brings about a carrying away, as it were, of the attack-producing toxin, and by the vasomotor effect (of the vaso-constricting property of adonis vernalis), which counteracts the congestion of the vessels of the brain, as observed in two patients of the author during an attack.[4]

Dermatol in Diarrhea of Children. — Dr. Poix [5] administers dermatol in doses of one gramme per day to children of six months and under, or two grammes and more to older ones. It is administered in any mucilaginous vehicle, a teaspoonful every hour. The results are highly satisfactory.

The Therapeutic Application of Common Table Salt Injections.— Dr. M. Eltz [6] finds that the colon absorbs more readily quantities of normal salt solution than ordinary water. Even in cases in which irrigation is followed by evacuation of the bowels, half or even more of the injected fluid remained in the organism. The solution was employed by the author in many cases of gastric atony, in a few cases of chronic nephritis and once in whooping-cough. In atony of the stomach the author succeeded, by the aid of the injection, in quenching the thirst without burdening the stomach. In nephritis large injections of the normal salt solution one half-hour before the production of sweating in the ordinary course of treatment enhanced greatly the effect of the sudorific. In the case of whooping-cough in a child that was unable during several days to retain a single drop of water, and suffered for two days with complete anuria, a few irrigations with the normal salt solution entirely removed these troublesome symptoms. Among other indications for the employment of this solution he also considers sudden hemorrhages and vomiting of pregnancy. Finally they are also used in cases where rectal alimentation is indicated.

Ichthyol in Anal Fissures.— Conitzer [7] used the drug in eight cases in the following manner: After anesthetizing the parts with cocaine, pure ichthyol is rubbed in on a glass rod, at first daily, and then every other day without cocaine. The stool must be watery.

Bronchitis:

℞ Terpinol, Sodi benzoatis, Sant. albi āā . . . . . gr. ii
Sig. Take six to twelve per day. q. s. et ft. pil. No. 1.

Correspondence.

A CORRECTION.

New York, September 10, 1899.

Mr. Editor: — In your issue of September 7th, p. 243, there is the following sentence, meant to be an extract from a paper read by me before the American Climatological Association (*Transactions*, Vol. XV, 1889): "When the child's heart is developing the cavities enlarge, but the wall of the heart does not always grow thicker."

I take it for granted that a great many of your subscribers read your columns with the same attention that I do and are influenced by them. That is why I refer to the grave error contained in the above statement. On p. 244 of the *Transactions* I say: "The heart of the young is comparatively large, heavy and healthy. Its weight in the newly-born is 0.89 per cent. of the body weight; in the adult 0.52 per cent. In the newly-born the cavity is small, 23 c.c. . . . the muscle is massive, equally thick on the right and left sides. . . . During the first five years there is an increase of the heart in bulk and weight, but none in circumference. . . . The cavities dilate rapidly only after the fifth year."

Very respectfully,
A. Jacobi, M.D.

[2] Deutsche med. Zeit., 1898.
[3] Revue Neurologique, February 15, 1899.
[4] Archivio de Farmac. e. Terap., June, 1899, 311, 312.
[5] Correspondsb. f. Schw. Ærtze, No. 5, 1899.
[6] Therap. Monatsschr., No. 9, 1898.
[7] Russian Therapeutic News, No. 8, 1899.

METEOROLOGICAL RECORD

For the week ending September 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...27	30.23	62	70	55	69	74	72	N.E.	N.E.	7	5	O.	C.	
M...28	30.26	64	73	56	70	88	79	N.E.	N.E.	10	6	F.	O.	
T...29	30.33	64	67	61	89	97	93	N.E.	E.	11	6	O.	R.	
W...30	30.29	67	75	59	92	81	86	N.E.	S.	3	8	O.	C.	
T...31	30.17	73	86	60	92	78	85	S.W.	S.W.	8	11	O.	C.	
F....1	30.12	70	77	63	86	100	93	S.W.	N.E.	9	20	O.	O.	
S....2	30.15	64	66	62	93	93	93	S.	N.E.	10	4	R.	O.	.36

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 2, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1155	505	17.36	12.08	9.84	.96	2.32
Chicago . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	336	117	16.24	10.73	8.70	1.74	3.77
St. Louis . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	219	96	18.86	9.66	12.42	1.84	.46
Baltimore . .	506,389	182	74	25.30	5.52	20.80	2.20	1.10
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	134	59	28.86	4.44	13.32	12.58	—
Washington . .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	63	21	23.85	9.42	20.41	1.57	—
Nashville . .	87,754	28	6	14.28	10.71	7.14	7.14	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	—	—	—	—	—	—	—
Fall River . .	95,919	64	45	49.92	3.12	48.36	—	1.56
Cambridge . .	89,724	29	14	44.85	3.45	37.95	—	3.45
Lowell . . .	88,641	43	25	30.16	6.96	30.16	—	—
Lynn . . .	66,763	—	—	—	—	—	—	—
New Bedford .	68,340	22	11	41.50	16.60	37.35	—	—
Somerville . .	68,101	17	10	58.80	5.88	52.92	5.88	—
Lawrence . .	57,263	30	23	46.66	6.66	36.66	—	10.00
Springfield . .	56,501	14	3	14.28	21.44	7.14	—	7.14
Holyoke . .	43,424	16	7	31.25	18.75	25.00	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem . . .	36,883	14	10	42.84	—	28.56	—	7.14
Malden . . .	34,613	8	2	37.50	12.50	25.00	—	12.50
Chelsea . . .	33,468	8	3	—	12.50	—	—	—
Haverhill . .	32,022	10	6	30.00	10.00	30.00	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	10	6	40.00	—	40.00	—	—
Fitchburg . .	29,438	7	4	28.56	—	28.56	—	—
Taunton . . .	28,167	—	—	—	—	—	—	—
Everett . . .	25,338	3	1	33.33	—	33.33	—	—
Quincy . . .	23,549	—	—	—	—	—	—	—
Pittsfield . .	22,643	9	4	11.11	—	11.11	—	—
Waltham . .	22,296	4	1	—	—	—	—	—
North Adams .	20,971	5	2	—	—	—	—	—
Chicopee . .	17,842	4	1	25.00	—	—	—	—
Medford . .	16,511	5	1	40.00	—	40.00	—	—
Newburyport .	14,915	8	1	12.50	—	—	12.50	—
Melrose . . .	14,632	—	—	—	—	—	—	—

Deaths reported 2,464; under five years of age 1,065; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 547, consumption 260, acute lung diseases 159, diarrheal diseases 364, diphtheria and croup 84, typhoid fever 48, whooping-cough 30, cerebro-spinal meningitis 18, erysipelas 15, scarlet fever 10, measles 6, malarial fever and small-pox 1 each.

From whooping-cough New York 17, Philadelphia 6, Boston 4, Baltimore, Cambridge and Waltham 1 each. From cerebro-spinal meningitis New York 14, Boston 3, New Bedford 1. From erysipelas New York 12, Pittsburg 2, Baltimore 1. From scarlet fever New York 4, Pittsburg 2, Philadelphia, Boston, Providence and Salem 1 each. From measles New York 6. From small-pox Boston 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending August 26th, the death-rate was 26 8. Deaths reported 5,868; acute diseases of the respiratory organs (London) 170, diarrhœa 1,587, measles 105, diphtheria 72, whooping-cough 71, fever 58, scarlet fever 25, small-pox (Hull) 1.

The death-rates ranged from 20.8 in Croydon to 38.0 in Salford; Birmingham 30.7, Bradford 24.1, Cardiff 24.1, Gateshead 27.9, Hull 26.3, Leeds 23.2, Liverpool 36 7, London 24.1, Manchester 33.7, Nottingham 30.1, Portsmouth 32.0, Sheffield 29.5, Swansea 22.1, West Ham 25.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 9, 1899.

E. H. MARSTELLER, surgeon, ordered to duty in connection with recruiting rendezvous, Buffalo, N. Y., to report at the New York Navy Yard, September 4th.

B. R. WARD, passed assistant surgeon, J. F. CHAFFEE, assistant surgeon, are detached from the "Boston" when put out of commission and ordered home to wait orders.

J. C. DECKER, surgeon, detached from the "Monadnock" and ordered to the "Monocacy," at own expense.

J. STOUGHTON, passed assistant surgeon, detached from the "Monocacy" and ordered to the "Monadnock," at own expense.

SOCIETY NOTICE.

TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE. — The eleventh annual meeting of the Society will be held in Chattanooga, Tuesday, Wednesday and Thursday, October 24, 25 and 26, 1899.

Those desiring to read papers should send titles to Frank Trester Smith, M.D., Secretary, Chattanooga.

BOOKS AND PAMPHLETS RECEIVED.

The Disinfection of the Alimentary Canal. By A. Jacobi, M.D., LL.D., New York.

Annual Announcement and Catalogue of the Baltimore Medical College, Session of 1899-1900.

Advice to Gonorrheal Patients. By Ferd. C. Valentine, M.D., of New York City. Reprint. 1899.

The Death-dealing Long-tube Nursing Bottle. By Ernest Wende, M.D., Buffalo. Reprint. 1899.

Thirteenth Annual Announcement, University of Oregon, Medical Department, Session of 1899-1900.

Johns Hopkins Hospital Reports. Vol. VII, Nos. 5, 6, 7, 8, 9. Baltimore: The Johns Hopkins Press. 1899.

Cases of Chickamauga Typhoid treated at the Maine General Hospital. By Chas. D. Smith, M.D., of Portland.

Prognosis in Chronic Valvular Affections of the Heart. By N. S. Davis, Jr., M.D., Chicago. Reprint. 1899.

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Original Articles.

CORRECTION IN LATERAL CURVATURE.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D., BOSTON.

As lateral curvature is in the main a vice of position and attitude, the treatment is directed chiefly towards the correction of faulty position and attitude. This treatment necessarily depends upon the pathological conditions, which vary at the different stages of development and severity of the affection, and these variations may be described as follow:

(1) Faulty attitudes with absolute flexibility of the spine, and without structural changes of ligaments, cartilage or bone.

(2) A curved position of the spine with flexibility, except to a limited degree in certain portions where the normal flexibility is checked by slight structural alterations of muscles, ligaments, or cartilage.

(3) Curves with limited flexibility of the spine, and with structural changes of the ligaments and cartilages.

(4) Stiffness of the spine, the curve being fixed by structural changes in the ligaments, cartilages and bone.

When individuals have attained their growth, and there is evidence of marked bony change, treatment must necessarily be palliative, but in individuals that have not reached full growth, even if structural changes are present, treatment can be expected to be of service in proportion to the amount of resistance to correction from the shape and structure of the bones.

The treatment in the first and second class would necessarily be largely gymnastic. In the second class the treatment should consist of gymnastics, supplemented by the use of measures for the increase of the flexibility of the spine, that is, the stretching of shortened contracted ligaments. These methods of treatment have already been fully discussed in previous papers on the subject. In the third class of cases, where resistance and flexibility of the spine exist, owing to firm structural changes, treatment by gymnastics and flexibility exercises will not be sufficient, and for these cases mechanical measures have always been attempted. They have, however, never been thoroughly successful as corrective measures, largely owing to the mechanical difficulty that is encountered. The important problem, therefore, before the orthopedic surgeon, is the selection of the best possible means of exerting pressure directly upon the projecting positions of the trunk.

The large number of variety of corsets that have been devised show the need of some method of treatment of the sort, but the great number of appliances used also indicates the lack of serviceableness and defects of most of them. It was supposed that the treatment by plaster jackets suggested by Sayre would be corrective, but the subsequent experience has shown that although this method is of value in caries of the spine, its value is considerably less in lateral than in anteroposterior curves from caries. The reason of this is manifest from the fact that suspension as applied by Dr. Sayre does not sufficiently correct the twist of the spine seen in lateral curvature.

It may frankly be admitted that the difficulties presented by extreme curves may be insurmountable or may be only partially overcome. If more pressure is required and for a longer time than can be borne by the patient for the correction of the curves of the bone, or for adaptive changes in the muscles and ligaments, manifestly no correction can be made.

Conversely, however, experience has taught that if sufficient pressure is applied properly, faulty shapes of bone in growing children can be corrected in various portions of the skeleton, jaw and long bones, and we need this pressure so severe as to be unendurable, provided it be constantly or continuously applied. Bone may be expected to grow straight, if it is prevented from growing crookedly. The softer the bone and the younger the child the more easily is the change produced.

Removable appliances are necessarily less efficient than fixed ones, owing to the difficulty of thorough adjustment after removal, and of fixed appliances, plaster-

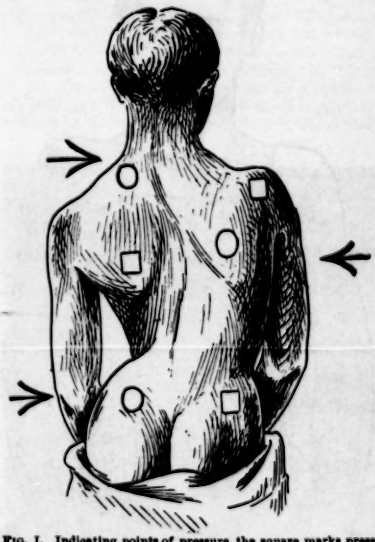


FIG. I. Indicating points of pressure, the square marks pressure in front and the round marks pressure behind.

of-Paris corsets are more easily worn, and more readily adjusted than anything yet devised. It is, however, necessary that they should be applied in such a way as to exert and maintain the desired pressure, as long as it is considered necessary to maintain corrective pressure.

A plaster jacket as ordinarily applied in lateral curvature often slips on wearing and presses upon the concavity, injuring as much as it corrects, even if it corrects at all. It is manifest that the jacket should be applied with the patient corrected as far as possible, and with the patient kept in the corrected position, until the plaster-of-Paris is sufficiently hard to maintain the correcting pressure, and that this correcting pressure should be as great as can be borne without distress and applied in the best possible directions.

It is not the purpose of this paper to relate the details of the experience gained upon the subject. It

will be sufficient to mention that the most feasible way of straightening the spine has been found to be by the removal of the superimposed weight by the recumbent position, rather than by vertical suspension, as the latter is less easily borne by the patient. It is also true that the use of an anesthetic in the correction for lateral curves has manifest disadvantages, and cannot be as frequently applied as is usually necessary for increasing correction in lateral curves.

In cases such as are suited to correction by this method, if the patient is placed upon the back, with or without head and foot traction, the middle line of the trunk can be made straight. Furthermore, if the patient lies with the weight of the trunk supported only upon certain points, where upward pressure is applied, the sag of the unsupported portions of the trunk will serve to aid in the correction of the twist of the trunk. This correction of the twist may be aided by pressing upon the prominent portion of the distorted chest and thorax, using for this purpose hand pressure downward, during the application of the plaster, upon the front of the patient, while the supporting points on which the patient lies exert an upward pressure.



FIG. II. Jacket applied.

In the ordinary curves of lateral curvature the portions requiring correcting pressure in the back are, (1) on the projection of the shoulder, or adjacent part of the thorax, below the scapula on one side, and (2) on the opposite side above the scapula or at the base of the neck, and (3) in the lower portion of the trunk in the lumbar region on the side opposite to the prominent shoulder.

In front, correcting pressure is to be exerted (1) on the thorax at its prominent part on one side; (2), on the head of the humerus or acromial end of the clavicle, and (3) projecting pelvic anterior-superior spine on the other. (Fig. I.)

Pressure in this way can be applied without discomfort to the patient, if supporting rods bearing small, removable plates of aluminum (over which felt is laid) are placed under the recumbent patient's back at the required points, the head, pelvis and thighs being supported by cushions on a table, or by straps stretched across a gas-pipe frame. The plaster bandages are applied as usual. Downward pressure can be made upon the thorax and shoulder while the plaster is hardening, and when the corset is firm the patient sits up, leaving the adequately padded aluminum plates incorporated in the plaster bandage, and exerting constant pressure. It is desirable that the plaster pass over the shoulder, close to the neck

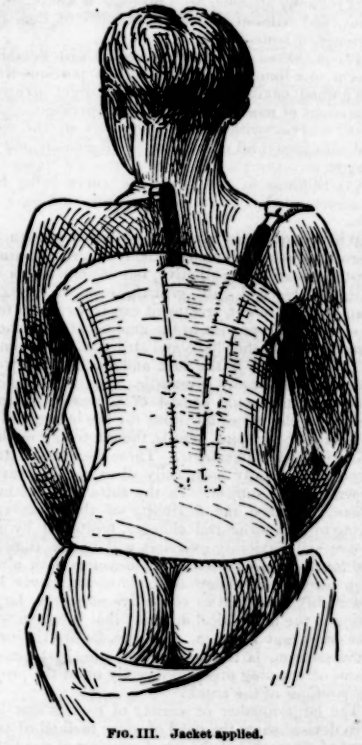


FIG. III. Jacket applied.

on the side of the projecting neck (that is, on the side opposite to the projecting shoulder), or that a strap attached to a steel be adjusted exerting pressure at this point. If this is not done, the corset will tip when the patient is erect, and the points of correcting pressure will be lost, the upper edge of the back of the corset pressing into the concavity of the curvature in the back, and the full benefit of the correcting lost. The acromial end of the projecting shoulder is to be kept back by a padded strap. (Figs. II and III.)

A correcting force should manifestly be applied not beyond the point of easy endurance and the jackets should be frequently changed. The treatment should be continued as long as it is possible to obtain correction, after which a removable corset and gymnastic treatment is to be employed. (Fig. IV.)

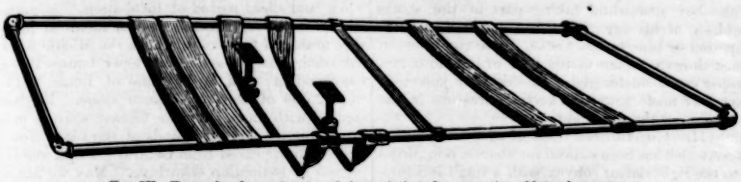


FIG. IV. Frame for the application of plaster jackets for correction of lateral curvature.

A few cases will serve as an illustration of this method.

CASE I. Girl, sixteen years of age, with low curve, rotation, spine moderately flexible, has been weak since a period of rapid growth, and unable to carry out systematically any definite exercise. The attempt was made to wear a removable corset, but owing to the child's condition, this was not successful, and the curve of the back had begun to increase. In view of this the plaster jacket was applied as a matter of trial, although it was felt at the time that possibly it could not be worn, but after two days it was found to be entirely comfortable and the patient much preferred it to any other form of treatment.

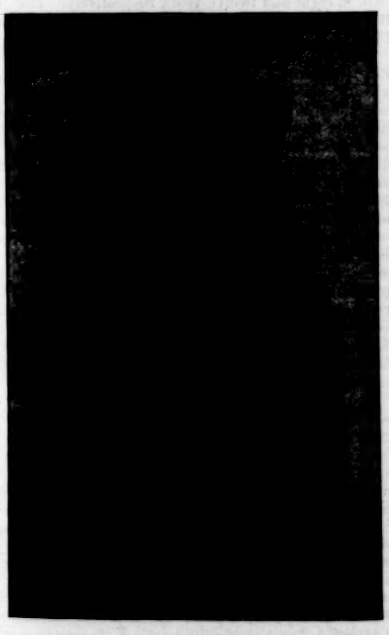


FIG. V. Case III before treatment.

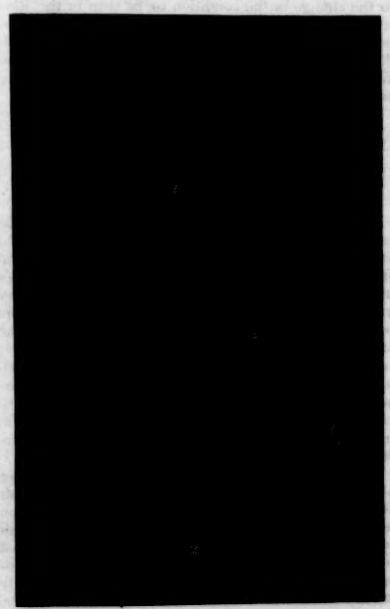


FIG. VI. Case III after two months' treatment.

CASE II. Boy, thirteen years of age, has worn removable jacket and attempted gymnastic exercises for over a year, but attention to this has not been satisfac-

tory, owing to the difficulty in making the boy carry out systematic treatment. There is a decided curve to the left in the lumbar region, with rotation, and slight curve to the right of dorsal region above. Suspension or recumbency does not obliterate the deformity.

The jacket was applied and worn with perfect comfort, the boy meanwhile taking part in the sports of children of his age. The first jacket was worn for a period of nine or ten weeks. The condition of the back shows complete obliteration of lumbar curve, the upper curve unchanged. In this first jacket no attempt was made towards exerting pressure in the dorsal region of the upper curve.

CASE III. Girl, thirteen years of age, with a resistant curve, which has been noticed for about a year, usual type, to the right dorsal convex with a small left lumbar convex curve. The curve did not disappear on suspension or recumbency, and there was a permanent rotation of ten degrees. This case presented an unusual degree of inflexibility in a patient of her age. Even by employment of considerable manual force in the recumbent position the curve could not be corrected.

The accompanying photograph shows the result in this case after the removal of the second jacket applied by the method described in this paper. In addition to the change in the condition to be seen in the illustration, an improvement in flexibility was noticed, so much so that with the child recumbent not only did the lateral deviation disappear, but there was improvement in the rotation, which by means of slight manual pressure was much more diminished.

THE STRUGGLE AGAINST TUBERCULOSIS.[1]

BY EDWARD O. OTIS, M.D., BOSTON.

No more striking and dramatic illustration of the use and neglect of measures for the prevention of disease has recently occurred than that of General Shafter's army at Santiago, and Colonel Huntington's marines at Guantanamo. The condition of the former army on its return to this country is too familiar to you to require further comment. One could not observe the latter body of men without being impressed with their sturdy, robust appearance, indicating the best of physical condition; and yet both had been under the same local and climatic conditions. The difference in results was principally due to the recognition and use in the one case and the disregard in the other of preventive measures of disease.

As evident as the advantages of prevention are over later attempts at cure, it is one of the most difficult and disheartening struggles to impress this fact upon the general public, and this is particularly true with regard to pulmonary tuberculosis. Long accustomed to its presence and entertaining the old ideas of inheritance and incurability, one listlessly and hopelessly bowed to it as to the inevitable. Of late, however, there has been a change of attitude and an awakening with regard to it all over the civilized world, growing steadily stronger and leading to practical measures for its prevention. The discovery of the tubercle bacillus, establishing the unity of the disease, has given a definite and exact basis upon which to work, and excited a hopefulness as to its restriction, if not to its ultimate extinction.

We may learn a lesson and gain encouragement in our struggle against this disease from the history of leprosy in Central Europe. Leprosy is a disease which bears a very close resemblance to tuberculosis. It has a "long and silent period of incubation," is contagious, and its micro organism is almost identical in appearance to that of tuberculosis. In the Middle Ages there were computed to be 19,000[2] leper houses throughout Christendom; and in the time of Louis VIII there were 2,000 of them in France alone. England was studded with them, and the disease existed in almost every country and the islands of the sea. Now it has entirely disappeared from Central Europe, and is in the process of extinction elsewhere. May we not reasonably hope that in like manner tuberculosis, under measures of prevention which experience has demonstrated possible of execution and effective, may suffer the same fate as this its allied disease? Already evidence exists which points to this result.

The mortality from consumption in England and Wales was over 38 per 10,000 in 1838; 24 in 1870, and nearly 14 in 1895. In Philadelphia and New York the mortality has been reduced 20 and 30 per cent. in eight and twelve years respectively. Here in Boston it has been reduced from 18.25 per cent. in 1871 to 11.55 per cent. in 1897.

As with other communicable diseases, we must be able to locate the tuberculous cases and control them when necessary; this seems to me essential and fundamental to any efficient prevention. Whether we obtain this knowledge by compulsory notification or depend upon the voluntary reports of the physician is still a debatable question. My own opinion is that sooner or later consumption will be included among the infectious diseases, and even the public may demand it as the result of our own teachings. At all events, we must have knowledge of the cases and their locality. Of course this is the most important among the poor in the tenement-house districts, where little attention to prevention is likely to obtain. The well-to-do and the more intelligent portions of the community can generally be depended upon now to observe the proper precautions as to the disposal of the sputum; this they have learned from the anti-spitting propagandism.

The importance of disinfection or renovation after a case of phthisis is, however, in my experience not generally appreciated. No tenement, apartment or room should be again occupied or let until satisfactory evidence of thorough disinfection or renovation has been furnished. A case narrated to me by a physician of this city will illustrate the importance of this. The daughter of the landlady of a well-to-do boarding house dies of consumption. Some time afterwards a young woman from the West takes up her residence in the boarding house and occupies the daughter's room. In the course of time she exhibits evidences of tuberculosis, and her physician, suspecting the source of infection, has her removed. Such experiences are probably familiar to many of you. To my knowledge the disinfection of premises which have been occupied by consumptive patients and vacated either by death or removal, before they can be occupied, is compulsory only in New York City, Italy and Spain.

[1] Read before the Suffolk District Medical Society, Section for Clinical Medicine, Pathology and Hygiene, March 15, 1899.

[2] Ransome: Causes and Prevention of Phthisis. Wood's Medical and Surgical Monographs, April 1891, p. 190.

The great struggle, however, is with the poor and ignorant consumptives who probably constitute a large majority of those suffering from the disease. They cannot be depended upon to safely dispose of the sputum either at home or abroad when they are still able to be about or attend to their occupation. In the latter stages of the disease they are often too weak to do so even with the best intention. The only resource then is isolation in especial consumptive hospitals or sanatoria, a step which is being agitated and indeed in the process of accomplishment, as I shall later show, in Europe and to a very limited extent in this country.

As in the Middle Ages the leper asylums existed, so in this age must we have the consumptive hospitals for the poor if the disease is ever to be exterminated. Not one but several such institutions would be required in or near every large city, which should afford free accommodation for consumptives in every stage. Those in the earlier stages and those exhibiting improvement under treatment could later be transferred to a sanatorium proper for the open-air treatment, conducted by the State, as at Rutland, or supported by voluntary contributions. Thus could the public be protected and the consumptive afforded an opportunity for recovery if possible, or receive comfortable care while he lived, which multitudes of them do not now receive. "I can conceive few objects," says Ransome, "better calculated to excite the compassion of all humane people than the condition of many of these poor sufferers who are shut out from the benefits of general hospitals." "In the place of the half-dozen such institutions," continues this same authority, "outside the Metropolis (London), there ought to be hundreds of them scattered about the country, in suitable localities and attached to all the chief centres of the population." But would not the expense of establishing and supporting such institutions preclude the undertaking either by the municipality, State, or through private beneficence?

"The poor laborer," says Dr. Cheever in his recent address at the opening of the new surgical amphitheatre at the City Hospital, "knocked down and crushed, receives here perfect nursing, asepsis, which means life and cure, good surgery, kindness and abundant food. He commands instantly an intelligent care and skill which the well-to-do have to wait and seek for, and even the rich sometimes do not attain."

If the city considers it a wise expenditure as well as a duty to offer such accommodations and treatment to the "knocked-down and crushed" poor laborer who is not a source of infection to any one else, would it not be at least an equally wise expenditure and duty to afford a refuge and treatment to the poor consumptive laborer, equally worthy, who may be a source of infection to those about him and the public, considering further the fact that the "knocked-down and crushed" laborers and all others who died a violent death in this city last year, for example, numbered 616, while those who died of consumption numbered 1,241? Morever, the city and State already are obliged to care for many of these poor sufferers in their almshouses and other institutions. To how much better purpose could the same amount be expended in especial institutions. Further, the number of consumptives by this means would be yearly reduced, which would mean a yearly saving of lives whose labor has a money value to the community.

As tuberculosis is caused by the ingestion of bacilli as well as by inhalation — and some authorities regard it as quite as frequent a cause — a rigid cattle inspection is an essential measure of prevention and especially of milch cows, for there does not appear to be much doubt that the largest part of ingestion tuberculosis is from tuberculous milk. The evidence of the danger from this source is abundant. In the recent investigation of the milk supply of Cambridge, England, more than half the dairies were found to be furnishing tuberculous milk, and it is not likely that this is a very exceptional state of things. I can see but one sure way of providing safe milk, and that is to require all milk-dealers to furnish satisfactory evidence that the cows from which their milk comes have been tested at stated intervals for tuberculosis and found free of the disease. Some cities already require this, as Syracuse and Minneapolis. The ordinance in the latter city is so comprehensive and thorough that it can profitably be quoted.

MINNEAPOLIS ORDINANCE FOR MILK INSPECTION.

"It shall be the duty of the Commission of Health to cause to be made by the veterinarian of the Department of Health, or under his direction and supervision, an examination of each and every animal producing milk for sale or consumption within said city and belonging to or controlled by said applicant, or the person from whom said applicant obtains milk, for the purpose of detecting the presence or absence of tuberculosis or any other contagious or infectious disease, and the said veterinarian of the Department of Health, in making such inspection and examination, is hereby authorized to use what is commonly known as the tuberculin test as a diagnostic agent for the detection of tuberculosis in such animals. After such examination and inspection of the dairies and dairy-herds as herein before provided, the Department of Health shall tag each and every animal so examined, which tag shall be of such a character as to afford a permanent record of such examination and the result of the same, as regards the presence or absence of any infectious or contagious disease."

In Massachusetts the appropriation for cattle inspection was refused by the Legislature last year, and it is again before that body this year. There are no State requirements as to the inspection of dairies or cows furnishing milk for the market. Some dealers on their own account have their herds tested, as, for example, the Deerfoot Farm. Sooner or later we shall realize the truth of the warning recently uttered,[3] "that economy in the regulation of tuberculosis is fearfully expensive economy, expensive in actual money, and above all, expensive in the lives and health of citizens."

A brief glance at the crusade against consumption in Europe may afford us encouragement. In nearly, if not quite, every country there is a general and active propagandism of prevention expressing itself in societies composed both of physicians and laymen, with the objects of raising money for the erection of sanatoria for the poor, and of issuing instructions to the people regarding the methods of avoiding the disease or communicating it to others. Most, if not all, of the governments have strict cattle inspection laws. In England recently the Prince of Wales presided over the Marlborough House meeting to establish a national society for the prevention of tuberculosis with the fol-

[3] Medical Record, Feb. 11, 1899, p. 176.

lowing objects: (*a*) To educate the public as to the means of preventing the spread of consumption from those already suffering from the disease; (*b*) to extinguish tuberculosis in cattle; (*c*) to promote the erection of sanatoria for the open-air treatment of tuberculous disease."

The secular press has also taken the matter up, and all the newspapers have frequent articles upon tuberculosis. The municipal councils of many cities are considering the question of establishing sanatoria. The Liverpool Hospital for Consumption has recently received a gift of $75,000 to extend its work.

For many years especial hospitals have existed in London and elsewhere in England for the isolation and treatment of the consumptive poor, in all sufficient to accommodate 4,900 persons. Of late the open-air treatment at home and in small hospitals is being advocated in England and tried with enthusiasm. In Germany almost every city of importance has its society for the erection of sanatoria and the general objects of prevention, Berlin, Cologne, Nuremburg, Worms, Munich, Würzburg, Hanover, Bremen, Frankfort, Breslau and others. In all Germany there are already in existence from twenty to thirty sanatoria for poor consumptives capable of accomodating 10,000 patients a year. An international congress on tuberculosis is to be held in Berlin in May of this year. In Denmark $100,000 has been collected for sanatorium purposes, and a law has been proposed in Parliament regarding free disinfection. Since 1893 a law for the suppression of tuberculosis in cattle has been in force in this country, with an annual appropriation of $14,000. In Russia the Emperor has donated $300,000 and a large tract of land upon which to erect a sanatorium in memory of the late Empress Marie Alexandrowna, who was a victim to phthisis. In Sweden the King, upon the occasion of the twenty-fifth anniversary of his coronation, donated $600,000, which had been presented to him by his people for some enterprise of public utility, for the erection of several sanatoria for poor consumptives. In Holland the young Queen, who was recently crowned, presented on this occasion $80,000 and a magnificent site for a sanatorium consecrated to the tuberculous poor. In Austria, under the able direction of Prof. Schrotter, a sanatorium has been erected at Alland, not far from Vienna, offering accommodations for more than 100 consumptives; those who are able do light work about the grounds. In France the profession has been exceedingly active in the struggle, as their admirable congress for the study of tuberculosis would indicate. There are also sanatoria at Angicourt, Armesson and Villiers-sur-Marne, with others projected. Belgium is likewise active both through the government and various societies throughout the kingdom instructing the public as to the dangers of tuberculosis and its prevention, and advocating the erection of sanatoria for the poor. Several institutions already exist on the seacoast for tuberculous children. Even in Greece and Turkey government disinfection is said to be carried out with marked benefit.

So it would seem that in a decade or two Europe would be dotted with consumptive hospitals and sanatoria, just as in the Middle Ages leper-houses existed everywhere, and as a result consumption would gradually decrease until, as with leprosy, it eventually became well-nigh exterminated.

In this country, in 1894, the following items were collected by Dr. Knopf,[4] of New York: Fourteen states have bovine laws and regulations and issue circulars regarding tuberculosis in man; two have bovine laws, but do nothing regarding tuberculosis in man; one has bovine laws, but no funds to enforce them; two have laws prohibiting the sale of tuberculous milk, but do nothing concerning the tuberculosis in the cows; eight have no bovine laws, but issue circulars concerning tuberculosis in man; seven have no boards of health, and from five no answers were received.

Before the Legislature of New York there is a bill pending for an appropriation for a sanatorium in the Adirondacks. The Board of Estimates and Apportionment in New York City has appropriated $60,000 for the purpose of isolating poor consumptives, and the Seton Hospital has been selected for this purpose. Compulsory notification also exists in that city and disinfection is required. In this State there is the Rutland Consumptive Hospital erected and supported by the State, for the reception of incipient cases who can pay $3.50 a week.

In this city (Boston) the estimated population in 1898 was 541,827, and the total mortality for that year 10,886, of which 1,241 were from pulmonary tuberculosis, 114 per 1,000 deaths, 79 more than all the deaths from measles, scarlatina, diphtheria, croup, whooping-cough, typhoid fever, cerebro-spinal meningitis, cancer and appendicitis combined. Of this number probably two-thirds, or 827, were of the poor classes. Leyden gives the ratio between the annual deaths and the total number of tuberculous persons as one to seven, which would give 9,928, or one out of every 54 inhabitants. The greatest mortality from consumption is between the ages of fifteen and sixty; that is, during the period of the greatest productive power of the individual. Estimating the value of a human life at $1,000, based upon what the individual has cost his family, the community, or State for his living, development and education, this community suffered a loss last year through pulmonary tuberculosis of $1,241,000. Further, as the consumptive is incapacitated from work a considerable time before he dies, his productive power is lost to that extent. Taking Gherard's[5] average of three months at $1.00 a day, there is a further loss of $111,690; a total of $1,352,690 for 1898.

If, now, by isolation and treatment in especial institutions the present mortality could be reduced one-half in a comparatively short time, as seems probable from the reduction which has already taken place in England and elsewhere, there would be a saving of $676,345 a year. Indeed, I believe that the expense of establishing especial institutions for this disease would be more than compensated for by this preservation of lives with years of service before them, and the added saving of the expense now incurred by the city and State in the care of the incapacitated consumptive.

At present there is no State appropriation for cattle inspection. Since December 22, 1898, the Board of Health requires that "the conditions under which every cow is kept whose milk is brought into the city of Boston shall be made known to the inspector of milk in such detail as the Board of Health may require," and, further, that "No milk shall be

[4] Journal of the American Medical Association, October 30, 1897.
[5] A Report of the Board of Health of the City of New York upon Pulmonary Tuberculosis, 1897.

sold, offered for sale or distributed in the city of Boston unless the cows from which it has derived have, within a year, been examined by a competent authority, and shown to be free from diseases dangerous to the public health; but this shall not be construed as forbidding the sale or use of milk from cows not tested with tuberculin." As, according to the conclusion of Ernst's very thorough investigations, "the possibility of milk from tuberculous udders containing the infectious element is undeniable," and "it is also equally undeniable that milk from diseased cows with no appreciable disease of the udder may, and not infrequently does, contain the bacillus of the disease"; and that, as has been demonstrated by the Cambridge investigation above referred to, a specimen of milk may be negative in its reaction one day, and a few days later show infection, and as the only possible and sure means in many cases of determining the existence of tuberculosis is the tuberculin test, which, as Nocard says, is exact and marvellously precise in its diagnostic indications, the only sure and safe means of eliminating tuberculosis from the milk would seem to be the tuberculin test, why then the last clause in the above regulations?

From the above considerations the Minneapolis ordinance, in the writer's opinion, ensures a greater security.

There is no certain means by required notification or otherwise of obtaining the knowledge of all the cases of consumption existing in this city or of locating them, and hence no complete supervision or control of them. There are no compulsory requirements of disinfection or renovation of premises occupied by a consumptive, or in which he has died, before occupancy is permitted to others. Disinfection, however, is done by the Board of Health if asked for. There are no means of isolating the poor consumptive, except the most limited in a few institutions; no general hospital cares to or ought to receive them. The homeless and friendless advanced cases and those too feeble to work must lead a miserable existence in their wretched tenements or go to the almshouse. The city has made superb provision for the poor sick with other contagious diseases, and for the poor "knocked-down and crushed laborer," but makes no adequate and proper provision for the poor consumptive, of whom at least 800 die every year, and probably from 3,000 to 5,000 are sick and disabled from the disease. Tuberculosis is a contagious disease; it is governed by the laws and conditions prevailing with other contagious diseases, and must be combated in a similar way. More persons die from it in this city than from all the other contagious diseases together, except pneumonia, if that is considered such. Is it not time that something more should be done by this city for its prevention?

"The knowledge now at command," says Drs. Biggs and Prudden in their report to the President of the New York Board of Health, "regarding the methods of extension of pulmonary tuberculosis, entirely justifies the belief that its ravages can as certainly be limited by proper sanitary control and appropriate treatment as can other infectious diseases, more acute, more dramatic, and more readily communicated, but at the same time far less prevalent, less fatal, and incomparably less important to the welfare of the community." "We firmly believe," they continue, "that with proper regulations tuberculosis may be restricted within the narrowest bounds, and eventually, perhaps, almost exterminated."

In conclusion, let me outline a plan for a systematic scheme of prevention in a city like this.

(1) Knowledge of all cases of tuberculosis and their habitat, and the power to control and supervise them; this knowledge to be obtained either by including consumption among the infectious and communicable diseases and requiring notification as with them — which I believe is the only thorough way — or by urging physicians through circulars from the Board of Health, frequently repeated, to report all cases coming within their observation, especially among the poor, or wherever there is doubt as to the proper disposal of the sputum.

(2) Instruction of the public as to the dangers of tuberculosis and their avoidance by circulars similar to those issued by the Pennsylvania Society for the Prevention of Tuberculosis. This is already done, I believe, to a greater or less extent.

(3) Compulsory disinfection or renovation of premises occupied by a consumptive, or in which a consumptive has died, before they can again be let or occupied.

(4) Hospital accommodations in especial buildings for poor consumptives and those of limited means, situated in or near the city, and receiving free all stages of the disease alike. Two such institutions with a capacity of 150 beds each, or three of 100 beds, would probably afford accommodation for 900 cases annually on the basis of an average residence of four months.

(5) One or more sanatoria proper in the country for the open-air treatment, not more than two or three hours distant from the city, where the incipient cases and those likely to be benefited by such treatment can be transferred from the city institutions. Rutland already accomplishes this to a limited extent.

(6) Free examination of sputum for tubercle bacilli, as is already done by the city and State.

(7) Regulations against spitting in public halls, conveyances and upon the sidewalks, such as already are in force in our street-car system, and in addition, the placing of spittoons in halls, waiting-rooms, stores, work-shops, out-patient waiting-rooms and possibly street-cars. In the writer's opinion, spitting properly conducted is a cleanly habit, and the deposit of sputum in appropriate receptacles is to be encouraged rather than in handkerchiefs or in the stomach. It seems a hardship to prohibit promiscuous spitting without making provision for a safe performance of this act, necessary to many persons.

(8) The establishment of especial out-patient clinics so that the consumptive cases can be segregated, and receive more detailed attention and instruction for themselves and friends as to how they may avoid communicating the disease.

(9) Control of the city milk supply, by requiring all dealers to furnish satisfactory evidence that the cows from which their milk is obtained have been found free from tuberculosis by the tuberculin test, which test is to be repeated at stated intervals.

(10) Inspection of animals slaughtered for food, and of all meat sent into the city. Possibly compulsory disinfection of old clothes in pawnshops, as advocated by Prof. Roche, of Dublin.[5]

Of all these, especial isolating hospitals are, in the writer's opinion, most urgent and most important.

[5] The Lancet, Feb. 11, 1899, p. 391.

THE USE OF ASTRINGENTS IN INTESTINAL CATARRH.

BY G. C. H. MEIER, M.D., NEW YORK,
Instructor in the New York Polyclinic.

WHEN the writer entered the practice of medicine, more than twenty years ago, the treatment of diarrheal affections comprised practically the use of opium, tannic acid, chalk, and bismuth subnitrate. In other words, the chief aim of treatment was to check the profuse diarrheal discharges as soon as possible.

With the development of the doctrine of the bacterial origin of many diseases, the treatment of intestinal disorders underwent a corresponding change, and thus arose what might be termed the antiseptic method of treatment. A large number of antiseptics have been proposed with a view of destroying the pathogenic organisms in the intestinal canal, and thus preventing fermentative processes. Among those which have chiefly claimed our attention are salicylic and carbolic acids, creosote, guaiacol-carbonate, resorcin and the various naphtol preparations. I have always been skeptical, however, as to whether the small doses of these drugs that can be administered with safety are really able to exert a sufficiently powerful antiseptic effect to arrest the growth of bacteria in the gastro-intestinal tract. That they effect some good I am firmly convinced, but I do not think that we should depend upon them completely to the exclusion of other remedial agents.

If we accept the modern theory, that many bowel troubles are due to toxic products generated by bacteria, it seems more logical to me to initiate the treatment of intestinal catarrhs with the use of some evacuant which will promote the elimination of toxins *per viam naturalem*. The drug most useful in my hands for this purpose is calomel, although castor oil may also be employed with good effects. The beneficial influence of calomel is shown by the change in the character of the stools. Castor oil also acts well, especially in the case of children, but is so objectionable to many persons that in most cases I prefer the use of calomel. Having freed the intestinal tract of all toxic irritating material, the diarrhea will sometimes cease under the administration of simple stomachics with bismuth. Often it is necessary to resort to further treatment before the profuse and exhausting discharges can be checked. Here is the proper field for intestinal astringents.

The list of intestinal astringents from which formerly we were compelled to make our choice was not a large one, comprising chiefly tannic acid and various preparations containing it, such as tinctures of kino and catechu and the mineral astringents, especially acetate of lead, sulphate of zinc, and sulphate of copper. The mineral astringents have the disadvantage of acting as irritants when given in doses sufficient to obtain their physiological effect, or of entering into inert combinations in the upper part of the intestinal canal. On the other hand, tannic acid and the various preparations containing it have the serious objection of irritating the mucous membrane of the stomach by acting upon the albuminous elements, and thus giving rise to more or less gastric disturbance. Much of the tannic acid administered probably undergoes absorption in the upper part of the bowels, or forms insoluble tannates which are devoid of any astringent action. In spite of these disadvantages, tannic acid has always been a favorite intestinal astringent. Lately chemical research has placed in our hands a number of new tannic-acid derivatives in which tannin is presented in a combination which passes unchanged through the stomach, and is gradually and slowly decomposed in the intestinal canal. The first of these preparations, introduced about four years ago to the medical profession, was tannigen or acetyl tannin. This preparation I have used quite considerably in my practice, but last year my attention was drawn to tannopine, a combination of tannin with urotropin, which I believe is superior to the former in many respects.

Tannopine contains 87 per cent. of tannic acid, and owing to its insolubility in fluids of acid or neutral reaction, it passes unchanged through the stomach, thus avoiding the irritating and even caustic effect of tannin upon the gastric mucosa. In the alkaline fluids of the intestine, tannopine is separated into its constituents, but this decomposition takes place so slowly and gradually that the astringent effect is not confined to the upper parts of the intestinal tract, as with most other remedies of this kind, but extends down to the lower part of the large intestine. Besides its astringent influence, tannopine also exerts an antiseptic action upon the intestinal contents. In my experience, it has never given rise to vomiting or irritation of the digestive tract, and as it is perfectly tasteless, it can be easily administered to children.

Dr. E. Schreiber[1] is the first to report his observations with tannopine, which were made in Professor Ebstein's clinic in Göttingen. His cases comprised acute and chronic enteritis, tuberculous enteritis, and typhoid fever, and in most instances the results were most encouraging. The diarrhea was promptly relieved without the least tendency to constipation. Schreiber warns us, however, not to discontinue the remedy too soon, in order to avoid recurrences. In typhoid fever attended with profuse diarrhea, tannopine rapidly reduced the number of passages, which also became firmer in consistence. In tuberculous enteritis it was found necessary to give the drug for a considerable time in order to effect any lasting improvement. In my article published in the *New York Medical Journal*, August 13, 1898, particular attention was directed to the value of tannopine in the chronic forms of diarrhea, especially common in adults and unattended with pain or nausea, the so-called chronic intestinal catarrhs. Excellent results were also obtained in cholera infantum, gastro-enteritis and dysentery. Since the publication of my article Dr. C. Fuchs[2] has reported his experience with tannopine in the medical clinic of Professor Drasche, of Vienna, and especially commends its action in cases of acute diarrhea, as well as in the diarrhea of intestinal tuberculosis. In chronic diarrhea its effect was found to be less certain, for while in some cases it arrested the diarrhea, in others it only diminished the number of evacuations.

Dr. G. Joachim[3] has particularly tested tannopine in cases of cholera infantum, cholera morbus and enteritis. In 19 cases of cholera infantum, in which profuse watery evacuations had been present for several days, tannopine acted very favorably. In 51 cases of gastro-intestinal catarrh tannopine was ad-

[1] Deutsche medicinische Wochenschrift, No. 49, 1897.
[2] Die Heilkunde, Hft. 11, 1898.
[3] Allgmeine medicinische Central-Zeitung, No. 65, 1898.

ministered in connection with minute doses (one-twelfth grain) of calomel, the latter being added for its disinfectant action. Good results were obtained in the majority of cases. In intestinal tuberculosis the results were much less favorable than those recorded by other authors. Joachim also points out that the remedy must be continued for some days after the cessation of the diarrhea in order to insure permanent cure.

Dr. J. Landau[4] has treated 79 cases of intestinal affections in children with tannopine, the majority being acute enteritis and gastro-enteritis, and most of the patients being below two years of age. He observed that under its administration in doses of four to eight grains four or five times a day, the diarrhea promptly subsided without the least disturbance of the digestive tract.

My later experiments with tannopine confirm the results of my former observations. I have found it to be even more efficient than tannigen in intestinal catarrhs, and especially adapted for children, as it is perfectly innocuous even in large doses. My experience embraces about 20 cases, and the results were particularly gratifying in the non-inflammatory forms of diarrhea, where the stools were frequent, watery, and passed without pain. Dietetic treatment should always be combined with the administration of tannopine. All food which is liable to fermentation and to increase the looseness of the bowels should be prohibited; a meat or milk diet should be strictly adhered to for some time, and sweets and pastry absolutely refrained from, as well as malt liquors and coffee.

Irrigation of the bowels with a warm normal salt solution will be found very grateful to the patient, particularly where there is some straining at stools, showing an involvement of the rectum. I have found it a good plan in the early stage of any diarrhea to administer a brisk purgative, such as castor oil or frequently repeated small doses of calomel, the latter acting at the same time as a disinfectant to the whole intestinal tract, checking fermentation and acting as a germicide to the bacteria present. Well-ventilated rooms and plenty of outdoor air also exert a favorable influence by their tonic power on the whole system and assist in overcoming the action of the toxins by increasing the vitality of the tissues.

The following cases taken from my record book illustrate well the conditions in which tannopine has proven most valuable in my hands, and will, I trust, be of interest to the reader:

Case I. Charley D., age five years, had been suffering for two days with vomiting and diarrhea, the stools being watery and containing shreds of mucus; no fever was present. He was put on calomel, one grain every hour, and the intestine flushed with sterilized salt water, using about two quarts injected as high up as possible. The vomiting ceased under this treatment, but the diarrhea continued, though with less frequency. Tannopine was now prescribed in eight-grain doses every three hours, and checked the discharge in two days. Treatment was continued for another day to assure a permanency of the cure, and the patient has since remained well.

Case II. Mrs. Th. M., fifty-nine years of age, suffers from chronic diarrhea, which makes its appearance whenever she is worried or angry. She is also affected with prolapsus uteri. Opium had a very disagreeable after-effect when given for the diarrhea, so she was just put on tannopine, ten grains three times a day, which succeeded in checking the discharge after a few doses, leaving no bad after-effects.

Case III. Walker B., age four months, bottle-fed, was taken with an acute attack of gastro-enteritis; temperature 104° (rectal); much pain. The baby was given a cool bath for ten minutes, which reduced the temperature to 101½°. Phenacetin, one grain, was prescribed every three hours, and a dose of castor oil administered. On the following day the child was much improved; the diarrhea, however, continued at intervals. Tannopine, three grains, was given every three hours for two days, and the child rapidly recovered.

Case IV. Will T., age twelve years, convalescing from an attack of pneumonia, complains of soreness in the abdomen and frequent watery discharges from the bowel. Tannopine, eight grains, was given three times a day, and rapidly effected a cure.

Case V. Henry D., age six years, suffers from prolapsus recti, and diarrheal passages. Injections of ice-water were prescribed after each passage, and tannopine, eight grains, every four hours in a little milk. Bismuth and chalk mixture had been of no avail previously, but tannopine rendered the stools firmer in consistence and kept the diarrhea perfectly in check.

Case VI. Grace D., age twelve years, complains of headache and diarrhea, which come on on alternate days. She has taken all kinds of diarrheal mixtures, with no permanent benefit. The child was ordered to take quinine, three grains, every three hours, and tannopine, five grains, after each stool. Both headache and diarrhea have disappeared. The quinine was continued for a week longer, and a few doses of tannopine were given every day. Result, no relapse.

Case VII. Harry B., age ten years, was seized suddenly with high fever, vomiting and diarrhea. The stools were slimy, but contained no blood; there was some tenesmus. A dose of castor oil was administered, and followed by five-grain doses of tannopine every three hours. The diarrhea was checked in twenty-four hours, and the passages became normal on the following day.

Case VIII. Sidney F., age nine months, was suddenly taken with convulsions and an elevation of temperature to 105° F. He was placed in a cool bath until the temperature was reduced to 102°. Then he began to vomit and purge; calomel, one-fourth grain, was given every half-hour until the discharges became spinach green. Vomiting ceased and the diarrhea became less frequent. Tannopine was now given in doses of three grains every two hours with the result that the stools were speedily changed to a normal consistence. At no time did tannopine produce any nausea or vomiting. It was generally given mixed with subnitrate of bismuth, either in some mucilaginous vehicle or in powders which were taken in milk.

In conclusion I would epitomize my experience as follows:

(1) That in all diarrheal affections of recent duration it is of the utmost importance to free the intestinal canal of all irritating material, preferably by the use of small doses of calomel.

(2) After this has been accomplished, it is usually

[4] Monatsschrift für praktische Medicin, December, 1898.

necessary to restore the tonicity of the relaxed intestinal mucous membrane and check the discharges by the use of astringents. In diarrheal affections of some days' duration, especially in children, it may be advisable to resort to the use of astringents at once in order to prevent exhaustion and collapse from the profuse and frequent evacuations.

(3) The best form in which to administer an intestinal astringent is one by which the astringent principle is slowly liberated in the intestinal canal so as to avoid any irritant effect upon the stomach, and also subject the lower intestinal tract to the influence of the remedy.

(4) Tannopine represents an efficient and reliable intestinal astringent, which, owing to its innocuousness, is well tolerated by the smallest children, and which, while an active astringent, is entirely free from irritating effects upon the intestinal canal.

Clinical Department.

SYPHILIS AND THE PARASYPHILITIC AFFECTIONS: TWO CASES.[1]

BY E. W. TAYLOR, M.D., BOSTON.

IT is evident that the last word has by no means been said regarding the etiological relationship of syphilis to the so-called parasyphilitic affections. That tabes and dementia paralytica occur frequently in persons with an antecedent syphilitic infection is unquestioned, but we need something more than coincidence to prove the point conclusively. A certain reactionary tendency is visible against the assumption of the close relationship between the two conditions, which has been generally accepted since Erb's statistics were published. For example, Guttmann,[2] in the study of 136 cases, found that 28.6 per cent. had had syphilis and 71.4 had not; six were doubtful. The occurrence of dementia paralytica as a sequence of syphilis is still less constant. It is not our purpose to discuss this difficult statistical question, but merely to draw attention to the fact that those cases in which there is a co-existence of symptoms of tertiary syphilis and the parasyphilitic affections are of particular clinical interest, and possibly are destined to throw some light on the matter. The following cases are also reported because of their somewhat unusual clinical course, and because of the difficulties attending their correct diagnosis.

CASE I. This patient, W. K., thirty-eight years old, claims to be a Moor, a statement which we have no reason to doubt. He was and is a man of good habits. His occupation formerly was that of a porter in a drawing-room car. In 1891 he was struck on the head in an accident, and from that time claims that he had certain mental peculiarities. He was married in 1890, and very soon thereafter contracted syphilis from his wife; he had a secondary eruption in 1891, was troubled in some way with his eyes, had much sore throat, some pain in the long bones of the legs, but no falling of the hair; a few months only after these symptoms, distinct delusions of grandeur developed, to which his mother also testified. He was under the impression that he had twenty-five students; that he was rich; that his mother was going to California in a private car. He also ordered his house carpeted at an expense of $500. He was at this time suspected by his employers of being mentally upset, and in 1893 was committed by Dr. Jelly to the Westboro Insane Hospital. He had had no definite and vigorous antisyphilitic treatment. He remained about six months at Westboro, without special treatment, and at the end of that time was taken home by his wife, who it is said gave him opiates for a period of eight months. Finally, in March, 1894, he was admitted to the Long Island Hospital, where I first saw him. He afterwards said that his memory had entirely failed at that time, that he did not know where he was, and that the first year of his residence at the hospital was practically a blank. During this period, which was before my connection with the hospital, he was unable to walk without assistance and declined absolutely to speak, but did not refuse food. It is probable that he had vague hallucinations of hearing, and at times he had attacks of violence. For several months before making a detailed examination I had observed the patient on my somewhat infrequent visits sitting passively in a chair, making no effort whatever to move, his face indicative of a deep depression, apparently regardless of his surroundings, and perfectly indifferent to his associates. He was being taken daily from his bed to a sun-room, where he spent most of his time, but remained for months perfectly speechless. Attempts to draw him out and elicit a word or two of recognition were absolutely ineffectual. He seemed depressed beyond the power to rouse, and it was for a time assumed that his refusal to walk was due rather to a mental inhibition than to a physical defect. This was, no doubt, in a small measure the case, but further examination revealed more adequate cause. It was as follows:

Motion.—There was slight tremor of the tongue; the cranial nerves showed no involvement. There was a much increased reflex at the wrist. The legs were emaciated without giving evidence of true muscular atrophy. Active and passive movements were both very deficient and conducive to spasm in hips and knees. Complete extension at the knees was not possible and he could not stand unsupported. The knee-jerks were much increased, but true ankle clonus was not obtainable. The gait was extremely spastic.

Sensation. — Muscle sense in the feet and toes retained; no objective disturbance of sensation. Slight urinary incontinence at night. Subjective complaint of paresthesia of legs.

Eyes. — Pupillary reactions normal; complains of a sensation of mist before the eyes, and states that at one time he had double vision.

Speech. — Hesitating in character when finally he began again to speak after being under treatment. The stock expression, "Third riding regiment of light artillery," was said with great difficulty, and he was utterly unable to repeat the alphabet spontaneously. The following is one of his attempts: *a, b, o, i, c, u, s, t, r, y, z, x, z*, with a tendency to go on indefinitely, and with no adequate consciousness that he was making mistakes.

As already indicated, the mental condition almost at once began to improve when active treatment of 100 to 200 grains of iodide of potash was instituted. He

[1] Read, in part, at a meeting of the Clinical Section of the Suffolk District Medical Society, March 15, 1899.

[2] Gutmann: Tabes Dorsalis und Syphilis. Zeitschr. f. klin. Med., xxxv, 1898, p. 242. Abstract in Journal of Nervous and Mental Disease, August, 1899.

seemed gradually to emerge from a state of absolute apathy, and mental blank such as one sees in infancy before the dawn of intelligence, into a state of receptivity. By degrees he relearned the alphabet, with the same effort that a child would have, and apparently with but small assistance from his previous knowledge. He studied laboriously to master the sequence of letters, in order to repeat them at the weekly visit, and finally after a long period of faithful effort was able to repeat them without mistake. With this reappearance of intelligence he gradually took more interest in his surroundings, occasionally smiled and could be drawn into more extended conversation. It was, however, not possible to learn anything definite of his mental state during his period of depression; there appeared, at least, to be no well-formed delusions to account for it. With the continuance of the iodide he improved rapidly. In the notes now at my disposal there is no mention of mercury, and my strong impression is that it was not given. After a time he began to walk without assistance, and his mental state rapidly cleared. He was somewhat troubled with urinary incontinence but not to a marked degree. His gait remained very spastic. This improvement took place in the course of about four months.

At the end of this time, the last note being July 31, 1894, he left the hospital and was not seen again until September 20, 1897. He had had no consistent treatment in the interval. Examination showed a persistence of the spastic gait, which had not improved; his bowels were regular in action and he was having no trouble with his urine. On October 4th he repeated the alphabet with some difficulty and omitted occasional letters; it was written also with several mistakes. The attempt to write from dictation "God save the Commonwealth of Massachusetts" resulted in an unintelligible scrawl, "God" being the only correctly written word. Repetition of difficult sentences was done badly, and reckoning was slow, but usually correct. He wrote his name correctly. His speech was not characteristic of general paralysis, nor was his appearance or manner. He was keenly conscious of his mistakes and apparently was embarrassed by them. Physical examination was as before. Deep reflexes remained much increased; of the superficial reflexes, the plantar was alone obtained. The pupils remained perfectly normal.

Treatment was again begun, and the iodide associated with mercury, first the biniodide and later inunction. In a few weeks the alphabet was again correctly written and great improvement noted in difficult sentences. As before, he took the greatest interest in his efforts in this direction. Repeated examinations showed no physical sign of significance other than those already noted. His frame of mind was one of entire satisfaction with his progress toward recovery, but his hopefulness could in no way be regarded as pathological.

On January 14, 1898, the note reads: "Says alphabet perfectly correctly; to-day repeats 'Third riding regiment of light artillery' quickly and correctly; does simple arithmetical examples well; is now taking charge of his mother's accounts." He has again a tendency to urinary incontinence. Has had no headache whatever.

Nearly a year later, December 27, 1898, he remained practically unchanged. I again quote from notes made at the time: "Does all the work at home, marketing, etc., and is able to get about better than before. At times legs feel stiff. Has taken no medicine for six months. Is satisfied with his condition; has had no trouble whatever in calculating (which his mother bears out); memory 'extra fine' now; shows no obvious speech defect. Has no discoverable delusions; no headaches. Has been going to night school for three months and is getting along well. Is now reading the second and third reader, which is not so far advanced as he was before his illness. It seems to him as if he were learning something entirely new, but it comes easier to him all the time."

Physical examination in March, 1899, gave the following results: Slight but definite ataxia of arms; legs somewhat weak; right pupil larger than left, with good light and accommodation reflexes; no diplopia; no headache; mental condition good; deep reflexes increased as before; right leg more spastic than left; abdominal, plantar, epigastric reflexes present; cremaster lacking; no facial tremor. Alphabet written with some mistakes, and unable to add 6+5. Multiplication well done. Repeats "Third riding regiment," etc., without faltering, and also without being asked what words to say, having remembered them from previous visits. The patient has not been seen for purposes of examination since.

Remarks. — This case offers many points of interest. In the first place have we to do with dementia paralytica with cord symptoms, or tertiary syphilis, or a combination of both? No doubt time is still required to answer this question with entire assurance. Pointing toward dementia paralytica we have the early symptoms of grandiose ideas, followed by a subsequent depressive stage, a by no means unusual occurrence. Cord degenerations are a frequent if not constant accompaniment of the cortical lesions, and should not in themselves exclude the diagnosis of general paralysis. The degree of spasticity and exaggeration of the deep reflexes, however, points rather toward a true syphilitic process. The marked tendency toward improvement under antisyphilitic treatment is rather against the idea of an uncomplicated dementia paralytica, though by no means absolutely conclusive. While fully aware of the danger of basing a diagnosis upon the results of treatment, this case seems one in which one might be allowed a little indulgence in spite of several recently expressed protests.[1] The effects of treatment may have been merely a coincidence, undertaken at times when improvement was about to take place spontaneously, or as Patrick points out, it is possible that antisyphilitic treatment may have some temporary effect upon dementia paralytica itself. My feeling, however, is that the evidence of treatment in this case is positive, and of considerable diagnostic value. There have been no epileptiform or paralytic seizures throughout the course of the disease.

When we turn to the second possibility of uncomplicated cerebro-spinal syphilis, we still have relatively little that is positive to go by. There have been no headaches, nor cranial nerve palsies beyond a doubtful diplopia, nor pupillary changes except a slight and recently developed inequality, which in any case is of small value in differential diagnosis.

[1] For a consideration of this and many other points of differential diagnosis between brain syphilis and general paralysis, see Patrick: New York Medical Journal, August 20, 24, September 10, 17, 1898; also Sachs: New York Medical Journal, May 27, 1899.

There has been absolutely no evidence of the usual multiple somatic signs of syphilis. The earliest obtainable symptoms were mental, and for those the patient was committed to an insane hospital. The character of the early delusions would point rather to dementia paralytica, though by no means pathognomonic. As an argument for syphilis we have the early manifestations of the cerebral lesions after the primary infection, a few months merely. The period of stupor and extreme depression following the early exaltation of ideas is rather more characteristic of syphilis than dementia paralytica. The cord symptoms point strongly to a syphilitic involvement of the type described by Erb. The improvement speaks for syphilis. As between the two conditions under consideration, therefore, the whole course of the disease points rather to cerebro-spinal syphilis than dementia paralytica.

The third possibility mentioned is altogether possible, that general paralysis has or will supervene in what is now a checked syphilitic process. It is to a careful study of these combined proliferative and degenerative lesions that we may look for a considerable amount of light in the future sifting of evidence regarding the etiological relationship of syphilis and the parasyphilitic affections.

CASE II. This case is of interest because of its obscurity for many years and its final definite outcome.

H., a married man of fifty-two, contracted syphilis in 1882. The infection was a source of great depression to him. He was treated for the disease by a skilled man, and since that time has repeatedly had antisyphilitic drugs, under the direction of as many as forty different physicians of note. He became notorious on account of his insistence on treatment, and came to be regarded as a person whose disease had so dominated his mind that argument was useless. He was, in other words, in the opinion of those who saw him, suffering from syphilophobia. In the course of his wanderings he had been to various psychiatrists, who recognized his depressed mental state, but attached no special significance to it. During the latter part of this period he became very much depressed, and continued so uninterruptedly for several years, in the meantime carrying on his work, that of a contractor, with success. His dominant thought seemed to be his infection, from which he apprehended various vague consequences.

I first saw him January 25, 1898, shortly after his return from Hot Springs, Arkansas, where he had again been undergoing vigorous treatment, which ended in marked mercurialization. Since his return he has had slight false ideas resulting from salivation. Examination showed that he had never had headache, diplopia, or cerebral symptoms of any sort. He complained of disturbance of sensation in the hands and feet for about two years, and, at times, of a feeling of constriction about the waist, but has had no urinary or rectal disturbance. Sexual intercourse was less satisfactory than heretofore. He has had pains in the legs for some time, which were apparently lancinating in character. He was able to make all movements of arms and legs without ataxia; there was no Romberg; gross strength was unimpaired. The knee-jerks were absent, as was also the cremaster reflex; other peripheral reflexes were normal and active. There were many subjective disturbances of sensation in the hands and feet and particularly on the outer side of the left thigh. Tests for touch and pain showed nothing abnormal, excepting at times a slight confusion of the head and point of a pin. There was a slight disturbance of muscle sense in the toes. The pupils were perfectly normal in size and contour, and gave an excellent reaction both to light and accommodation. There was not a suggestion of any speech defect.

The most striking thing about the patient was his excessive talkativeness and introspection. His one object appeared to be to exhaust his medical adviser with a detailed description of his symptoms, always with syphilis in the background. As is usual in such cases, his acquaintance with drugs was pitiful in its completeness, and his general knowledge of just how to take care of himself was as remarkable as his devotion to doctors. It seemed, however, a common enough type, and certainly suggested nothing deeper than an extreme hypochondriasis, just as it had impressed others before. The diagnosis reached was early tabes dorsalis and syphilophobia.

From this time until the latter part of February, I was besieged with well written and highly detailed letters of his condition from day to day, and of the exact amounts of the various drugs which he had prescribed for himself, as he afterwards reproachfully told me. The symptoms were insignificant and the letters quite in accord with the earlier opinion. Not a suspicion had entered my mind of a degenerative brain affection, or even of cerebral syphilis.

Finally, on February 24th, he failed to keep an appointment, and I went to the house. The whole situation was changed. His persistent mood of hypochondriasis, which had lasted for many years, had entirely passed. His son told me that his father had been acting strangely for some time, and distinctly different from his usual habit. He had grown jealous and suspicious of his wife; had spoken in a bantering way to a washwoman; had been alluding to himself in an unusually satisfied way, and had within a few days bought a valuable piece of land on a main street for the purpose of building. He was, when seen, in a very exhilarated frame of mind regarding the above business venture, which he thought an excellent one. He said he had bought a piece of land for $12,000, for which he proposed to pay cash; for this purpose he had sold well-paying bonds. He said he was worth $70,000; that he had made an excellent, long spiritual prayer, that he had a remarkable flow of speech. He had been writing a great many letters regarding building and had prepared plans of a house on slips of paper with many figures and estimates; one of them was headed: "Father's Birthday, Heaven," with the date. One letter of twelve pages was sent to a contractor, effusive in character and ending with "Amen." He claimed that he was a spiritualist, and telepathist and believed in the presence of departed spirits. He was previously not at all religious.

These examples suffice to show what an absolute change had come over the patient's thoughts. The diagnosis, unsuspected to this time, was clear, and subsequent events confirmed it. The pupils, however, were normal, and there was still no speech defect. Dementia rapidly supervened; his letters showed characteristic omissions and mistakes; he gained in weight; a variety of delusions developed; he drank excessively before being finally committed to a hospital. When last seen, about a year after first coming under observation, he presented a perfectly typical

figure of general paralysis. He had had apoplectiform attacks, which had not before occurred, and was rapidly failing.

This case requires but little comment. Its interest to those who saw it is much greater than can possibly be conveyed to the reader. The simulation of a simple hypochondriasis was complete for a long period of years. This hypochondriasis, in the light of the outcome, is rather to be regarded as an extraordinarily long depressive stage of dementia paralytica. To make that diagnosis, however, with sufficient assurance to check the reckless expenditure of money appears to have been impossible. The cord symptoms, distinctly of a tabetic type, are also of considerable interest, and were likely to mislead, in the absence of typical mental symptoms, as, in fact, they did. The case did not have that generally progressive character, which Patrick [4] speaks of as characteristic, nor did anything like typical mental symptoms (if there be typical symptoms in general paralysis) dominate the clinical picture. We are of the impression that up to the time when grandiose ideas first presented themselves a dogmatic diagnosis could not have been made, in spite of the fact that the disease was already of long standing.

The two cases taken together are instructive. In one the symptoms of cerebro-spinal syphilis were at first obscured by signs pointing to general paralysis, and in the other the symptom-complex of general paralysis emerged only after years of atypical symptoms, which were unrelieved by faithful antisyphilitic treatment. The lessons of these and similar cases are manifold. They deserve and demand the most painstaking study, for just this relationship and confusion between the syphilitic and parasyphilitic affections affords one of the most difficult and important diagnostic problems with which we have to deal.

Medical Progress.

REPORT ON PROGRESS IN PATHOLOGY.

BY JAMES H. WRIGHT, M.D., BOSTON,
Director of the Laboratory of the Massachusetts General Hospital.

PARASITES AND CARCINOMA.

N. G. Plimmer [1] describes and figures peculiar bodies observed by him in the tumor cells in a large number of cases of carcinoma. These are similar in appearances to some of the bodies which have been described by various other observers in recent years and to which various names have been given. Like many others, Plimmer regards these as parasites. He states that in a single case he has succeeded in obtaining cultures of the organism by the use of a special culture medium made from carcinomatous tissue. This organism seem to be allied to the blastomycetes. It grows best under anaërobic conditions. Inoculated into animals it produces multiple tumor growths of an endotheliomatous character.

THE PATHOGENIC ACTION OF YEASTS.

Alex. G. R. Foulerton [2] studied the effect of the inoculation of animals with various species of blastomycetes. He found that with some species tumor formations at the point of inoculation were produced and in some instances metastatic tumors in the internal organs as well. His attention, however, was chiefly devoted to the pathogenic action of a yeast which he isolated from two cases of pharyngitis. This he proposes to call *saccharomyces tumefaciens albus*. It was actively pathogenic for tame mice and for rabbits, less so for guinea-pigs. In rabbits tumors were produced at the seat of inoculation with secondary tumors in various organs, in some cases. In the mice no tumor formations were observed. Histologically the tumor growths were composed of mononuclear round cells. Rarely large cells containing the organism were seen.

TUBERCLE BACILLI IN THE MILK OF TUBERCULOUS COWS.

The bacteriological examination of milk for tubercle bacilli has given varying results on the hands of different bacteriologists. Thus, among others, Obermüller found the bacilli in 61 per cent. of samples of milk sold in Berlin, while Petri only found them in 14 per cent.

The question of the frequency of the occurrence of tubercle bacilli in milk and of the value of the tuberculin reaction as indicating the probable presence of tubercle bacilli in the milk, has been investigated by Lydia Rabinowitsch and Walter Kempner [3] in the Institute for Infectious Diseases and in the Pathological Institute of the Veterinary High School of Berlin. Of 25 samples of milk from various sources 7, or 28 per cent. contained tubercle bacilli.

As to the frequency of the occurrence of the bacilli in the milk of cows known or suspected to be tuberculous, there are wide differences in the results of various investigators. Thus Nocard found them in the milk in only 5.5 per cent. of the cows, H. C. Ernest, of Boston, in 28.6 per cent., and Hirschberger in 55 per cent.

There seems to be a general agreement that the milk of cows with well-marked tuberculosis is very apt to contain tubercle bacilli and that such milk should not be used without sterilization. On the other hand, there is much difference of opinion with regard to the infectiousness of the milk of cows with only slight tubercular lesions and without apparent disease of the udder, or of cows which react to tuberculin without clinical signs of tuberculosis. Rabinowitsch and Kempner examined the milk of 15 cows which had reacted to tuberculin. In the milk of 10 of them, or in 67 per cent., they found tubercle bacilli.

Of the 10 positive cases there was tuberculosis of the udder in only two. In three there were no definite clinical signs of tuberculosis and in one only very early pulmonary lesions. The remainder were more or less extensively affected by the disease.

The authors conclude from their study that the milk of apparently healthy cows, which react to tuberculin, or of cows in the early stage of tuberculosis without involvement of the udder, may contain tubercle bacilli. Although the number of observations was small they think that they are justified in the opinion that the milk of cows which react to tuberculin should be regarded the same as milk from frankly tubercu-

[1] The Practitioner, April, 1899.
[2] Journal of Pathology and Bacteriology, vol. vii, No. 1, May, 1899.
[3] Zeitschrift für Hygiene und Infectionskrankheiten, Bd. xxxi, Heft. 1, May 26, 1899.
[4] Patrick: New York Medical Journal, August 20, 21, September 17, 1898.

lous cows, and that the surest way to keep a milk supply free from tubercle bacilli is by the use of the tuberculin test.

EXPERIMENTAL HEMOGLOBINURIA.

Dr. Anton A. Christomanos,[4] working in the Physiological Institute at Athens, Greece, has availed himself of the fact that subcutaneous injections of glycerin cause hemoglobinuria to study the blood and organs of rabbits so treated. He finds that the glycerin produces a thickening of the blood by abstraction of water and also produces a hemoglobinemia. The blood corpuscles which become useless from loss of hemoglobin are deposited in the spleen and bone marrow, where they are taken up by large cells. The number of red corpuscles in the blood is at first apparently increased, and this is due to the abstraction of the water by the glycerin, but soon, within four to five hours after the injection of the glycerin, a diminution in the number of red corpuscles becomes evident. The size of the corpuscles is also diminished by the glycerin. The free hemoglobin in the blood plasma does not enter the renal tubules from the glomeruli but is deposited in the epithelial cells of the renal tubules from the intertubular capillaries and from these cells it makes its way into the lumina of the renal tubules, where it may be accumulated to such an extent as to completely fill them. Most of the tubules of the kidney may be thus occluded.

EXPERIMENTAL CASEOUS PNEUMONIA.

J. Auclair[5] makes a contribution to the subject of the etiology of the caseous pneumonia of pulmonary tuberculosis. This lesion is considered by some to be due to the action of other bacteria than the tubercle bacillus, or, in other words, to be due to a secondary infection of the lung by pyogenic bacteria. On the other hand some believe that the condition is due to the effects of soluble poisons derived from the tubercle bacilli in the ordinary tubercular lesions elsewhere in the lung.

In previous publications[6] Auclair has shown that a poison may be extracted from tubercle bacilli, by means of ether or chloroform, or xylene or benzine, which is capable of producing suppuration and caseous degeneration of animal tissues.

In the present paper he has studied the effect of intratracheal injections of the ethereal extract in animals. He finds that such injections produce all stages and appearances of caseous pneumonia and he considers that he has clearly demonstrated that caseous pneumonia is due to the action of the poisons produced by the tubercle bacilli and not to secondary infections of the lung with other bacteria.

THE ETIOLOGY OF BERI-BERI.

Yamagiva[7] contributes an exhaustive report of his observations on this disease in Japan. He concludes that the disease is due to the daily use of an inferior kind of boiled rice. This food material produces a form of chronic intoxication which is characterized by a contraction of the arterioles throughout the body. From this there result hypertrophy and dilatation of the heart, anemia of the skin and mucous membranes and of the nerves and muscles, together with regressive changes in these organs and tissues owing to the anemia.

THE BACTERIAL FLORA OF THE LUNGS.

L. Beco[8] has made an extensive study of healthy lungs of man and animals with reference to the question of the presence or absence of bacteria in them.

As regards the healthy lung of both domestic and laboratory animals his conclusions are in part as follows: The bacteria usually present in the upper air passages do not invade the lung after death. When the lung is sterile at the moment of death it behaves as a closed organ as far as concerns the invasion of putrefactive bacteria from the intestine. If, at death, the lung is infected, the bacteria in it may rapidly multiply and, in the case of putrefactive bacteria, a rapid putrefaction may result with extension to neighboring organs. In the case of strictly pathogenic bacteria, however, the invasion of neighboring organs is slow and only occurs exceptionally.

For his study of the subject on the lung of man he selected 20 cases in which the lung appeared normal and in which bronchial lesions were absent. Among these were six cases in which death had occurred suddenly during complete or relatively good health.

From these cases the following results were obtained: The inferior respiratory tracts in the healthy man may be sterile, but frequently in lungs free from any gross lesions pathogenic bacteria may be present, usually in small number. These bacteria are those which are the usual infectious agents in acute pulmonary infections, namely, the pneumococcus, streptococcus and the staphylococcus (rarely). It is probable that during the last hours of life, or during the agony, and proportionately to the length of the same, there occurs an invasion of the lung by the bacteria of the upper air passages. Under the usual conditions, however, this invasion does not occur after death. Further, if various species of bacteria have invaded the lung, there may be observed after death a diminution in the number of these species.

The tubercle bacillus could not be demonstrated in the healthy lung although it was sought for in 11 of the cases.

THE IMPLANTATION OF EMBRYONIC CELLS IN THE ANIMAL BODY.

A. Birsch-Hirschfeld and Garten[9] report the results of the injection of freshly disintegrated tissues of young embryos into the liver of adult animals. In the goat, rabbit, chicken, salamander and frog, tumor-like new growths of cartilaginous tissue were obtained in the liver and lungs. In the chicken, after some weeks, adenoid structures, epithelial-like cells and pigmented cells, were found in the liver. The injected cells clearly seemed to have differentiated themselves in the animal body. The experiments were most successful when accompanied by a periodic stimulation of the liver tissue. The growth of the embryonic tissue was only transitory. After weeks and months the tumor-like new growths became encapsulated and regressive changes set in. Finally resorption of the tissue took place.

[4] Virchow's Archiv f. path. Anat.. Bd. clvi, Hft. 3, 1899.
[5] Archives de médecine expérimentale et d'anatomie pathologique, T. xi, No. 1, May, 1899.
[6] These doct., Paris, 1897, and Revue de la tuberculose, No. 2, 1897.
[7] Virchow's Archiv f. path. Anat., Bd. clvi, Hft. 3, 1899.
[8] Archives de médecine expérimentale et d'anatomie pathologique T. xi, No. 3, May, 1899.
[9] Beitrage zu path. Anat. und. zu allegem. Path., Ziegler, Bd. xxvi, Heft 1.

THE HISTOGENESIS OF ORGANIZING PNEUMONIA.

Prof. Ribbert,[10] of Zurich, has studied this interesting condition with the aid of serial sections and a modification of Mallory's staining method. He confirms the view that the branching masses of connective tissue, which invade the air cells of the lung and which are so characteristic of the process, have their origin in the bronchioles and smallest bronchi. In early cases an organic connection of this tissue with the alveolar walls cannot be demonstrated, but such connection can always be seen with the walls of the smaller branches of the bronchial tree. The process consists in an outgrowth of connective-tissue cells and embryonic blood-vessels into the exudate which fills these canals and the air cells.

BACTERIOLYTIC ENZYMES AND ACQUIRED IMMUNITY.

R. Emmerich and O. Loew[11] have made an interesting contribution to the subject of immunity to infectious diseases. They report the results of a long series of experiments, their summary of which is essentially as follows: The cessation of growth which is observed in most cultures of bacteria before all the nutrient substances are used up is due to the development of an enzyme-like substance which is formed by the bacteria themselves. This substance is capable in turn of destroying and dissolving the bacteria. Some of these enzymes can not only destroy and dissolve the same species of bacteria which produced them, but they can also destroy other species of bacteria.

The curative effects of the so-called products of metabolism of bacteria or of unfiltered cultures of bacteria is due to the action of these bacterial enzymes in the culture fluids.

The artificial immunity produced by the products of bacterial metabolism or by cultures of pathogenic bacteria is due to the fact that the bacteriolytic enzyme combines slowly with an albuminous substance in the blood. The resulting compound has the same bacteria-destroying powers as the original enzyme itself. This combination, which takes place in the animal body only, slowly and with great waste of enzyme, may be produced rapidly *in vitro* by chemical action. We are now, therefore, in a position, at least in some of the infectious diseases, to produce artificially an antitoxic serum without the aid of the animal organism.

The so-called "agglutination" or "clump reaction" is nothing but the first stage of the bacteria-destroying power of a bacteriolytic enzyme combined with the albumin of the blood.

The serum of immune animals is much more bactericidal in its effects in the absence of air than in the presence of air. This is a fact that has been completely overlooked. By great concentration of such serum marked bactericidal effects may be produced even in the presence of air.

Some bacterial enzymes when introduced into the animal body act not only destructively upon the bacteria which may be present, but also upon the bacterial poisons or toxins. Thus, for example, the enzyme of the *bacillus pyocyaneus* can completely neutralize the fatal effects of the toxin or poison produced by the *diphtheria bacillus*.

Judging from the experiments on animals, the enzyme of the *bacillus pyocyaneus* should be suitable for the successful treatment of anthrax, plague, diphtheria, etc., in man. By means of an antitoxic serum produced artificially *in vitro* with the enzyme of the *bacillus pyocyaneus* an immunity against anthrax of a high grade may be produced in animals.

The bactericidal effect of normal blood is probably also due to enzyme-like substances in it. The fact that high concentration of normal blood gives it the property of agglutination for certain bacteria is a point in favor of this idea.

[10] Virchow's Archiv. f. path. Anat., Bd. clvi, Heft 1.
[11] Zeitschrift für Hygiene und Infectionskrankheiten, Bd. xxxi, Heft 1, May 26, 1899.

SITUS VISCERUM INVERSUS.

Arnold Koller[12] describes a new case of this rare anomaly and adds an account of the theories which have been advanced concerning its origin. He also describes several cases of malformation and some experiments on freshly fertilized fish eggs, which have a bearing upon Förster's view that in all double monsters one fetus shows the *situs inversus*.

He thinks that, according to our present knowledge and in the light of his own observation, the *situs inversus* can be most simply explained upon the assumption of a symmetrical double fetus formation, in which the fetus possessing the normal arrangement of its viscera has disappeared. He finds that Förster's view, that *situs inversus* is always found in one fetus in the case of double monsters, is not true. It does occur, but not in all cases. Double monsters may be produced experimentally by various means applied directly after the fertilization of the egg. Their formation is due to the abnormal character of the sexual elements or to the effect of various influences acting immediately after the fertilization.

SCARLET FEVER.

R. M. Pearce[13] reports the results of a thorough pathological and bacteriological study of 23 autopsies on scarlet fever performed in the Pathological Laboratory of the Boston City Hospital.

No specific infectious agent was found which could be regarded as the cause of the disease. Anatomically, the only constant lesion found was a hyperplasia of the lymphadenoid tissue everywhere, especially in the lymphatic glands. The lesion was particularly marked in the lymphadenoid structures of the intestine.

In only a few cases was a pseudo-membrane present on the tonsils. In this streptococci were found but never diphtheria bacilli.

The most frequent complications were otitis media and bronchopneumonia.

In 11 of the cases there was a general infection with the pyogenic cocci, the streptococcus being present in nine of the cases. The infections with these organisms are regarded as secondary, for in all but two of the cases there was some inflammatory condition which could be regarded as an infection atrium.

The most prominent histological changes observed were as follows: In the skin, congestion of the blood-vessels, dilatation of the lymphatics and infiltration with polymorphonuclear leucocytes. In the tongue this condition was much more marked, and here there were also degeneration and necrosis of the epithelium. Similar changes were also present in the mucous mem-

[12] Virchow's Archiv f. path. Anat., Bd. clvi, Heft 1, April 21, 1899.
[13] Scarlet Fever: Its Pathology, Histology and Bacteriology. Medical and Surgical Reports of the Boston City Hospital, 1899; also Journal of the Boston Society of Medical Sciences, vol. iii, No. 6, February, 1899. (Abstract.)

brane of the pharynx and in neighboring structures. In a few cases small streptococcus abscesses were observed in the lymphoid tissue of these parts.

The most striking changes in the lymphatic glands and in the spleen were the proliferation of the endothelial cells and the presence of plasma cells. The proliferated endothelial cells were often phagocytic. The behavior of these cells here is similar to their behavior in typhoid fever, as recently described by Mallory. These same conditions were not only present in the larger lymphatic glands, but also in the smaller aggregations of lymphadenoid tissue along the respiratory and gastro-intestinal tracts.

In the mucous membrane of the gastro-intestinal tract there were found degenerative changes in the epithelium and an increased number of plasma cells and eosinophilic leucocytes besides the changes in the lymphadenoid tissue above mentioned.

Fatty degeneration of the muscles of the heart was observed in five of these cases and fragmentation of the muscle fibres in three cases.

In four cases focal necroses were found on the liver. These seem to originate in the same way as the hepatic lesions recently described by Mallory in typhoid fever. They apparently are due to circulatory disturbances in the capillaries caused by the occlusion of capillaries with endothelial cells which are derived either from the endothelium of the liver, or from the endothelium of other organs, which reach the liver by embolism. In one of these cases a necrosis of the cells of the central parts of the liver lobule was observed. These are regarded by Pearce as due to the effect of a toxin in the circulating blood acting on that portion of the lobule where the circulation is slowest.

In the cases studied by Pearce no examples of glomerulonephritis were met with, although one of the forms of this renal condition is commonly thought to be a not infrequent complication of scarlet fever. The author thinks that this may be due to the fact that his cases were for the most part too recent for these renal lesions to develop. In eight cases, however, more or less well-marked acute interstitial changes were observed in the kidneys, characterized by the presence of plasma cells in the interstitial tissue. These cases have been more fully described by Professor Councilman[14] in a recent paper on acute interstitial nephritis.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

REGULAR meeting Wednesday, March 15, 1899, DR. H. F. VICKERY in the chair.

DR. W. H. SMITH showed a specimen of

ACUTE ENDOCARDITIS OF THE TRICUSPID VALVE.

DR. E. W. TAYLOR read a paper entitled

SYPHILIS OR DEMENTIA PARALYTICA; A CASE FOR DIAGNOSIS.[1]

[1] See page 286 of the Journal.

[14] Transactions of the Association of American Physicians, 1898.

DR. VICKERY: Were any vasomotor symptoms such as flushings or sudden pallor recorded?

DR. TAYLOR: It would be difficult to tell about flushing in this case as the patient's color was very dark. In general, I did not discover any vasomotor symptoms.

DR. F. H. WILLIAMS: I think we all feel indebted to Dr. Taylor for presenting an interesting and rare case so clearly. Nothing can be said in addition to what he has stated; it certainly is a very unusual case, and one very well worthy of record.

DR. E. O. OTIS presented a paper entitled

THE STRUGGLE AGAINST TUBERCULOSIS.[2]

DR. KNIGHT: I think that Dr. Otis has certainly covered the ground very thoroughly on this subject. It seems to me that there has been a reluctance on the part of city, State and national governments to take hold of this question on account of its size; it seemed too big a subject to tackle, the disease seemed too widespread. In talking with several officials they have expressed that opinion. They felt that something ought to be done, but the subject was so big they didn't like to take hold of it. There is no doubt about the diminution in mortality of tubercular disease, particularly in Great Britain and in this country. This has been attributed in England largely to the increase in the number of hospitals and consequent treatment and isolation. In this country it cannot be attributed to this, but I think is attributed more to our knowledge of the disease and improved hygiene, improved modes of life, outdoor life and outdoor treatment. It seems curious that the United States, generally quick in adopting new methods of treatment, should be so far behind in this question of the establishment of hospitals for consumptives, but we are very far behind most of the European countries, and I am glad to see that Dr. Otis is making an effort in the right direction. When I appeared several times before the Finance Committee at the State House with regard to the Rutland Hospital I was surprised to find how well disposed every man of that committee was toward the project. They said: "This does not seem to be enough. You want more than one hospital for this purpose. You will want certainly three in Massachusetts." And I said: "Yes, we shall. We ought to have one in the city, one in the central and one in the western part of the State." And they seemed quite willing, if they were in power when the time came, to make appropriations. It seems to me the community would tolerate even the reporting of cases. That has been one great bugbear, that there would be a resentment in regard to reporting cases, that the people would not stand it, but, as far as I have seen, the people seem to be willing to do anything which is going to diminish the mortality of this disease. For instance, how quickly everybody obeyed the order in regard to spitting in the cars. I was astonished to see how quickly the cars, from being very filthy, became clean. People obeyed the admonition of the Board of Health. So I think, even if an order was issued that cases should be reported, though at first people might resent it, yet I think they would soon take it as they do the reporting of diphtheria or any other infectious disease, provided that the official visit, if one was necessary, was made in the proper way. It seems to me that now is the time to act in this matter, that

[2] See page 280 of the Journal.

people have been educated up to that point in which they will approve of appropriations, and the legislatures will be willing to make appropriations for isolating hospitals as well as for those for incipient cases. When the appropriation was made for Rutland I think that the members of the committee supposed that they were establishing a home for consumptives, but the trustees when they came to consider the working of the hospital thought it would be better to make the first institution an institution for the cure of early cases. I am not sure they were not right. Certainly it is more interesting for the staff who have to attend them. But we want and want badly the other class of institutions — the institutions for the isolation of the advanced cases, because it is from the advanced cases that the disease is mostly spread in the community, and I think that if a determined effort is now made for one large institution of that kind near the city, where patients can be visited by their friends, the great majority of whom live in the city, it can be obtained. The establishment of others for incipient cases will follow naturally.

Dr. V. Y. Bowditch: I can add very little to Dr. Otis's paper; only emphasize certain points he brings up. In the first place, having the privilege of being one of the attending physicians at the new State Hospital for Consumptives at Rutland, Mass., I think it would be perhaps of interest if I spoke of one or two facts which I have noted since the opening of the hospital in October. I confess when it was first opened I had some doubt as to how far it would be successful in getting the kind of case we wished; not the dirty poor, but the respectable poor, and I felt it was questionable whether they would be content to go together in the open wards. There are a few private rooms in case of severe illness, but as a rule the patients are in open wards. I have been perfectly astonished to see the philosophy with which all these patients came under the treatment and the cheerfulness and even pleasure with which they seemed to undertake whatever was mapped out for them in the way of treatment. Undoubtedly there is a moral influence from the mere fact that they are in an institution or sanitarium where a certain amount of military discipline exists, which I cannot — and I think that is the experience of most physicians — accomplish in private families. You cannot get the open-air treatment in a private house, except in occasional cases, as you can in an institution of that sort. These patients sleep in an atmosphere that at home would be almost impossible. The windows are open and at first in the coldest winter weather the patients would naturally complain of its being cold, but I have been astonished to see how quickly they become accustomed to it and like it. We have already had one or two cases of patients going home previous to the time advised but who have begged to be taken back, because, as they expressed it, "they could not breathe at home."

Then, too, I regard the establishment of this hospital as an immense benefit to the community, not only to the individual himself who is treated, but to his family and friends. The patients go home and tell and write of the methods of treatment, of the value and importance of fresh air and good food; they see the effect of it upon themselves, in short, they act as missionaries. I only wish and hope sincerely that every member of the profession will make it sometime or other his duty to visit the Rutland Hospital simply to see what can be done with people collected together in that way. I have spoken of the difference between treating patients in an institution of this sort and the results to be obtained in private practice, especially among the poorer classes. Before long I hope to give the subsequent histories of "arrested cases," so-called, at the Sharon Sanitarium, also for poor people, proving that after the lapse of years a good percentage of those cases that have been there have remained arrested and for all practical purposes are well. In my own experience I cannot recall a single case among the poorer classes where the trouble has been arrested for long, when attempting to treat them at their houses. In some of the wealthier ones it has been possible. These results at the Sharon Sanitarium can, I think with justice, be said to be somewhat unique from the fact that that little institution is not at a great altitude and not far from a great city, thus proving what can be done in our midst, as it were, and what be done under similar circumstances elsewhere.

I cordially recommend urging upon the Legislature persistently the importance of having institutions of both kinds, that is to say, sanitaria for incipient cases in higher altitudes throughout the State, and special institutions near the great cities for the advanced cases where altitude is no special object, but simply places where those dying can be taken care of and taken away from the crowded districts of the city where they are, of course, sources of danger to others.

I am glad to say this year the appropriation for the Rutland Hospital went through the Ways and Means Committee without a dissenting voice. There is not enough appropriated to satisfactorily carry it through, but we hope next year for a larger sum. It must be remembered, too, that an institution of that sort is always more expensive to carry on than an ordinary hospital; you must have extra food. I do not mean fancy food of any kind, but the necessity of having plenty of milk and eggs involves generous outlay, and in order to get the largest amount of fresh air for each individual patient you must have a larger hospital than you would for ordinary cases.

Dr. Knight has touched upon the fact that the object of the Rutland Sanitarium was somewhat changed from the original idea, and yet I am sure he feels and I feel it is wiser to keep it more for the incipient cases where there is hope of cure rather than to receive cases so advanced that mere alleviation of symptoms is all that can be accomplished. For such, the element of altitude is of little moment, and special hospitals nearer the centres of population are sufficient.

Dr. Otis has touched upon the necessity of examining all cattle, and I agree most heartily to that. Whether we change our views somewhat or not as to the intimate relation between bovine tuberculosis and human tuberculosis, it is well for us at least to err on the side of health and to have rigid laws with regard to tuberculous cattle.

Also I wish that we could urge the necessity of having special hospitals if for nothing more than to relieve our general hospitals of having phthisical patients mixed with the others. Not only is there the possibility of infection, but for the phthisical patient himself it is not so good in a ward where other diseases are treated. I trust before another generation has passed we shall see, as Dr. Knight and Dr. Otis have said, special hospitals near every large city and town in Massachusetts for both kinds of cases. I feel

proud of the fact that Massachusetts was the first to establish a State sanitarium for consumptives. I consider it one of the greatest steps she has taken for many years towards the cure and prevention of disease.

DR. ABBOTT: There is no part of the civilized world in which this subject, the struggle against tuberculosis, has not at some time within the past year or two been discussed. It has sometimes been called a crusade, a very apt term. The principal point I would like to urge at this time is the particular class of people affected. The hospitals that are intended for their reception will be filled in the future not by children under fifteen, not by adults over sixty or seventy, but by the wage-earning class. I have no doubt the majority of the patients at Rutland are between fifteen and forty years of age. The Imperial Board of Health of Germany brought this point out particularly in a circular issued about three or four years ago It has been reproduced in the report of the New York City Board of Health, 1896,[3] entitled the "Utility of Sanitaria or Hospitals for the Treatment of Consumption," and they produced very carefully compiled figures to show the wealth that is returned to the State by the curing of consumptives and returning them to their industries and homes, where they can again be useful. I presented some figures two years ago showing the exact ratio in Massachusetts now and forty years ago of the deaths from consumption of this class of people, the wage-earners, as compared with the general death-rate. We speak of a mortality of perhaps 10, 12 or more out of every 100 deaths from consumption.

But that relates to all times of life, from birth to old age. If we take the period twenty to thirty years we have the highest, and in the city of Vienna there were 643 persons out of every 1,000 deaths from all causes from consumption or deaths from tuberculosis; from pulmonary tuberculosis, 597 or more; in Belgium, 529 out of every 1,000; in Massachusetts, 1894 and 1895, 436, but that is a great improvement over several years ago. I compared the year 1856–57 with 1894–95, and they have been reduced from 409 deaths from consumption to each 1,000 deaths from all causes among males at the wage-earning period, fifteen to sixty years of age, to 209, and from 509 in women to 287.

Dr. Otis's final point, the importance of isolating hospitals for this purpose, is the most important of the whole. Notification of cases is an important matter, and is worthy of careful consideration. In England it is nowhere required. The law in regard to notification is peculiar in England. It is something like our liquor law in this country — a law of local option. Certain diseases are reported, such as diphtheria, typhoid fever, scarlet fever and three or four others, but consumption is not mentioned among them. This act is in force in localities containing about five-sixths of the total population of England. There is a very marked difference between England and America in the matter of fees for reporting. In Massachusetts no man receives a fee for notifying a case of infectious disease, but in England he receives a fee of two shillings and sixpence for each notice. If a similar law were to be enacted here some better results might follow. I hardly think it practicable just at present.

With regard to the necessity of hospitals for large cities as well as for the State, there is no doubt about it; that is, for a city as large as Boston. We have in this city one of the most substantial and well-conducted hospitals in the country for the treatment of infectious diseases. There is not another so well adapted to its uses in the United States. But at the same time this important disease, consumption, has no special place for treatment except two or more private charities in this city. A physician said two or three years ago, when the Rutland Hospital was first proposed, that there would be nobody to fill it, but the falsity of such prediction has been shown, and I have no doubt that half a dozen of such institutions could be used in this State with good effect. One of the main advantages is the removal of the man or woman, as the case may be, from the liability of causing danger to his relatives. He is an especial danger to the class of patients that ought to go to such a place, that is, the tenement-house people, those who are living in one to three-room tenements, sometimes in one-room tenements. Many people in this city are of that class. It is a very serious question among that class, and far more so than among those people who live in the better districts. A consumptive separated by only two or three feet from his relatives and friends is a far greater danger than when separated by two or three rooms, and that is one of the important points to be remembered. To my mind the final conclusion in Dr. Otis's paper is the most important of all — the establishment of asylums of this class.

DR. F. H. WILLIAMS: It is certainly a question of great importance and Dr. Otis has presented it to us extremely well. It has many sides and while we all agree on the main points we may not all give to each point the same importance. There can be no question about the need of abundant hospital facilities for patients suffering from tuberculosis. I think there can also be no question about the great importance of teaching people how to take care of themselves and how to guard others against the disease. About two years ago I was much attracted by the marvellously good work done in New York by Drs. Biggs and Park. They laid great stress on the importance of teaching people in the poorer districts of the city what they should do, how they should take care of expectoration and what the dangers were to others in the neighborhood of a tuberculous patient, and they were much encouraged by the intelligent interest which these people took in the precautions which the Board of Health suggested. I think the health authorities in New York went about the problem very wisely, very diplomatically; they did not hurry, but took time, spent one or two more years in teaching people what they ought to do and gradually made regulations which seemed to them suitable. I think that is one reason why they have succeeded so well. The people were eager to learn and to do what they were told to do and quickly saw the importance and force of what the Board of Health wished. One other point in connection with tuberculosis and that is this, it is a mistake to frighten people too much about it. Instruct them, tell them what they should do and what they should not do, but do not make them think if they come within a hundred feet of a patient with tuberculosis they are likely to get the disease. It is only a few years ago, and in fact I think the same feeling still remains, that every one in the community was very much afraid of diphtheria and I think most of us had a notion that it was an extremely dangerous dis-

[3] Page 274.

ease to be near. I do not think it is, if people are aware that a given person has diphtheria and take certain simple precautions. Let me illustrate what I mean. When I first began using the culture test for finding the bacilli of diphtheria — I believe I was the first to use it in this community and initiated its use at the City Hospital — I found to my surprise that a considerable proportion of the patients who were in the diphtheria ward did not have diphtheria and I never knew any one of those to take it, though there was a diphtheria patient on each side of them, unless some instrument were put from the mouth of a patient having diphtheria into the mouth of a patient not having the disease. If simple precautions were taken, so far as my experience went, patients who had not diphtheria did not get it. In like manner, in regard to tuberculosis every effort should be made to teach every one some of the precautions which should be taken to prevent the spread of tuberculosis and good results will follow. I have no doubt that as time goes on the method of examining the chest by means of the fluoroscope will be more used in doubtful cases and aid us to make the diagnosis in a large number of cases earlier than now. The best precaution against the spread of the disease is to make a diagnosis as early as possible.

Dr. Barnes: Without pretending to have sufficient information to justify an opinion as to how intimate relations are necessary to cause infection in tuberculosis it seems to me that a word in regard to a proposition which is now before the Legislature affecting the ventilation of our electric cars and steam cars is of consequence, for it is not the afflicted alone that we ought to consider but the strong and robust, who Dr. Abbott has so admirably shown us are exposed to infection from consumption as a consequence of indoor life; that is, as I understand his position, consumption is essentially an indoor disease. The proposition I refer to is to enclose the electric cars with a vestibule. We know it is quite agreeable out of town, where few patrons occupy the cars, but in town, with a cubic air space of not over three or four feet per capita, it seems to me a very dangerous thing to shut off all the accidental avenues of ventilation. When ventilators are governed by the caprice of passengers or conductor, the ignorant, the coarse and vulgar control. A person who has regard for his health gets into a car and noticing the foul air speaks to the conductor and asks him to open a ventilator, a man in the opposite corner shouts, "Shut that ventilator," and the ventilator is invariably closed. It seems to me the only effective way of obtaining pure air under this system is by occasionally opening the front door, and with the enclosures we should get but very little fresh air as a consequence. In the month of January I made investigation of the number of conductors and motormen of the West End Road incapacitated by diseases of the respiratory organs and found the percentage higher for the conductors than the motormen. Of a total of 3,925 men employed, sickness from pneumonia, bronchitis, influenza, inflamed throat, pleurisy, and consumption was reported by 31, or about eight in 1,000; 15 motormen and 16 conductors. The cases reported under "cold" or grippe for the month numbered 806. Three hundred and sixty-three, or 18 per cent., were motormen and 443, or 22 per cent., were conductors. Sickness from these causes was reported by 23 per cent. of the whole number. It was during the epidemic of grippe, and although we have no statistics showing what percentage of the population of Boston was ill at that time it seems to me from some little experience in families where every member was sick the percentage was very much larger. So that with the feeling that outdoor life is just as good for the strong and robust as for the consumptive, which is so well demonstrated at Rutland, I think the profession can very well use its influence in opposition to this proposition of enclosing the platforms and shutting off the avenues of ventilation. The conditions are so bad in the steam cars that I dread to take a journey at this season of the year owing to the infernal heat and foul atmosphere, being usually under the control of negro porters, who are notorious for their love of heat and bad air. The car becomes almost unbearable and how often we hear of friends and acquaintances taking a trip to New York and bronchitis or pneumonia the result. It seems to me exposures to heat and infected air have far greater influence than any possible exposure to cold in causing pneumonia and other respiratory diseases.

Dr. Vickery: I have been much encouraged observing the very rapid increase in the amount of practical knowledge about the prophylaxis of consumption among what we call the ignorant and poor. It seems to me that is one of the most encouraging signs of the whole trend of events at present and for my part I think that the next ten years will see a more rapid diminution in the incidence and the death-rate of tuberculosis than we have yet had.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-first Annual Congress, held in Chicago, May 22, 23 and 24, 1899.

(Continued from No. 11, p. 270.)

Dr. A. Coolidge, Jr., of Boston, read a paper entitled

Removal of a Foreign Body from Bronchial Tube through Tracheal Opening.

A teamster, age twenty-three, was admitted to hospital a year ago. He had worn a tracheal tube for twenty years. The last one was of hard rubber and was several months old. Twelve hours before admission the tube had become detached from the shield and had been inhaled. On admission severe coughing, dyspnea and noisy breathing were noted. Examination by x-ray was negative. Patient was etherized and put on his back with the shoulders over the end of the table, with the head held downwards and rotated to the right side. The tracheal wound was enlarged downwards. A urethroscope one-half inch in diameter and three inches long was passed into the tracheal wound with the stilette in place, turned downwards, the stilette withdrawn and the speculum without any difficulty pushed down the trachea to within about an inch of the bifurcation. For illumination a hand mirror and sunlight were used and the foreign body seen in the right bronchus, with the upper end about half an inch below the bifurcation. It was seized with a long pair of alligator forceps introduced through the speculum, and removed without difficulty. No after ill effects were noted. During the whole time respiration was carried on through the speculum. There was some inconvenience at first from coughing but none

from secretion. The mucosa of the trachea was cocainized.

The histories of foreign bodies in the air passages treated expectantly show such a large mortality from septic pneumonia that the following rules are pertinent for discussion:

In case a body is large enough to make it probable that it has gone no lower than a primary bronchus, we should immediately tracheotomize and explore by means of straight tubes as large as possible. If the body is in a secondary bronchus, operative interference is justifiable if there is a good chance of reaching it after illuminating the primary bronchus, as would be the case especially on the right side. A body loose in the trachea is much less dangerous than the same body impacted in a bronchial tube and hence every violent respiratory excitant should be avoided. It is better to tracheotomize under cocaine than under ether. In special cases tracheotomy may be avoided by introducing straight tubes through the glottis from above but if the body is being rattled to and fro in the trachea it would not be justifiable to run any further risk of its being inhaled. Even when it is in the larynx in such a position that attempts at removal are likely to push it further down, it is safer to do tracheotomy and reach it from below. That absolute surgical cleanliness is indispensable to prevent septic pneumonia goes without saying. A favoring circumstance in the use of the straight tubes is the mobility of the lower trachea and bronchi, which permits considerable straightening or bringing into line the bronchus under observation.

DR. H. L. SWAIN, of New Haven, related the histories of two cases of foreign body in the bronchi. He said that statistics show that they are frequently expelled sometimes months after they are inhaled into the air tubes. Ulceration is set up and they become dislodged. In one of his cases a shingle nail remained in the bronchus for some months, when the patient was struck by a train and made senseless. On recovering consciousness he had a violent fit of coughing during which the nail was expelled.

DR. ROE stated that on looking up the statistics of the subject he had found that in thousands of instances the body had been expelled. The best results come from leaving the body alone if it is not producing active symptoms.

DR. DE ROALDES believed that we should not hesitate to operate. In seven out of his eight cases the body had been removed through the tracheal wound. A low tracheotomy should be done and the bronchus titillated so as to excite cough while the edges of the wound were held wide open. We ought not to advise non-interference.

DR. WOOLEN thought that if there were no immediate symptoms and if we knew the body to be of such a nature that it could be easily expelled it was advisable to defer operation.

DR. G. HUDSON MAKUEN, of Philadelphia, read a paper entitled

EXHIBITION OF A CASE OF STAMMERING, WITH DEMONSTRATION OF METHODS EMPLOYED IN THE TREATMENT.

The patient was a civil engineer, age twenty-nine, who had stammered since childhood. There was no assignable cause for the affection, which seemed to be the outcome of a congenital neurosis. The chief characteristic of his defect was a spasmodic contraction of the muscles of the soft palate, resulting in sudden closure during attempts at vocalization and articulation of what Dr. Makuen called the posterior palatolingual chink. These spasms were of variable frequency and duration and came at most unexpected times. They gave the speech a peculiar jerky character and sometimes blocked it entirely. The defect was more pronounced in reading than in speaking. There was also a sort of mental hesitation and he could not always think connectedly.

In all these cases the location of the neurosis varies and must be determined by a close study of each individual. In this particular instance the theory of a congenital neurosis is strengthened by the fact that a younger brother began to stammer and was saved from further trouble only by the most careful management. In the older brother the primary neurosis was located not in the nerves supplying the muscles of the pharynx, but in those supplying the respiratory organs, and the pharyngeal spasm was secondary or reflex and due to an overflow of nervous energy from the respiratory and vocal mechanisms. There was a lack of promptitude in the vocal element of speech. It was as if the bow hand of the violinist should suddenly cease to operate simultaneously with the string fingers, and as if the string fingers should try, by increased energy of action, to compensate for the delinquent bowing. This forced and unnatural fingering has its counterpart in the spasmodic action of the articulatory and other muscles of the stammerer.

In normal speech the action of the muscles is entirely automatic and when any of the mechanisms employed fails to perform its functions, this automatic action becomes impaired and it is the effort to control the lagging mechanism and to bring its action into harmony with the other mechanisms that constitutes the chief difficulty of the stammerer. In this particular instance the respiratory mechanism was at fault and resort was had to direct nervimuscle training; that is, the singling out of the muscles with faulty action and by voluntary exercises training them to functionate properly. This is superior to the indirect method which leads the patient unconsciously by means of approximately correct speech to use the muscles properly. The former develops the nerves as well as the muscles and establishes a volitional control over the faulty mechanism.

The essential parts of the respiratory mechanism are the thorax, the muscles regulating its size and the nerves supplying them. The muscles are divided into two sets according as they elevate or depress the ribs. The levators are inspiratory and the depressors expiratory. We can train our patients to develop the action of any one of their muscles, even of the diaphragm. Then we can combine the muscular mechanism with the vocal.

At the close of the morning session the following specimens and instruments were presented:

DR. FARLOW: An intranasal splint; large adenoids removed from woman of fifty; similar specimen by DR. SWAIN.

The Secretary, for DR. THOMAS R. FRENCH, of Brooklyn: Post-nasal forceps, mouth-gag and a modified Bosworth nasal speculum.

DR. COOLIDGE: A nasal splint for external injuries, as fracture of the nasal bones, and also a laryngeal applicator devised by DR. J. P. CLARK, of Boston.

DR. CASSELBERRY: A nasal snare.

AFTERNOON SESSION.

Dr. A. W. de Roaldes, of New Orleans, made a report of a few

CASES OF CHRONIC EMPYEMA OF THE ANTRUM OF HIGHMORE OPERATED BY THE CALDWELL-LUC METHOD.

This paper is based on five observations of chronic empyema of the antrum in which a prompt and radical cure has been obtained by the use of the Caldwell-Luc operation performed under the direction of the writer by his assistant, Dr. Gordon King. The results have been so uniformly satisfactory that surprise is expressed at the fact that the method, first conceived by an American, has not been more generally employed in this country. As is now well known through the able and exhaustive writings of Dr. Luc, this operation offers superior advantages over the older procedures. Its technique, elaborately described in the first observation, can be briefly summed up in the following steps:

(1) A buccal incision parallel with and near enough to the upper gingivolabial fold to insure subsequently an easy reunion of the mucoperiosteal flaps.

(2) Resection of the anterior wall of the antrum in the canine fossa, leaving an opening ovoid in shape, the extremities of which will facilitate the access to the tuberosity on the one side and to the nasal wall on the other.

(3) A thorough curettage and complete removal of the diseased tissues of the cavity.

(4) Partial turbinectomy of the anterior extremity of the inferior turbinate.

(5) Creation of a large artificial opening in the nasal wall of the antrum as near the angle formed by the floor and anterior wall as possible.

(6) Suturing of the mucoperiosteal flaps after having made the last inspection of the cavity, which is cleansed and dried and dusted gently with iodoform powder. The dressing is proceeded with by a light packing of iodoform gauze introduced carefully into the antrum through the large artificial opening in the nose, which is followed by a similar dressing of the corresponding nasal fossa. This is changed from the third to the fifth day, and every other day afterwards until the twelfth or fifteenth day, when the washing of the cavity twice a day is entrusted to the patient, who makes use of a warm boracic-acid solution by means of a proper canula and a Davidson syringe. The cases thus treated were discharged radically cured between the fourth and sixth weeks. In one of them, however, a little secretion could be found occasionally at the entrance of the sinus, but this was due to a remaining ethmoidal suppuration finding its way into the sinus through a partial destruction of its nasal wall from an old necrotic process. In connection with the report of these cases Dr. de Roaldes insists on the importance of clearly establishing the existence of any other focus of suppuration, as a co-existent implication of the ethmoidal cells or of the frontal sinus is to be considered as a serious complication, which may retard materially the healing of the antrum. In conclusion, Dr. de Roaldes makes a strong plea in favor of this operation, which has proved so uniformly successful in cases which, treated by older methods, had too often shown a discouraging obstinacy.

In discussing the paper, Dr. Roe said that we ought to consider the level of the antral floor with reference to that of the nasal passage and also that the existence of pockets or septa in the antrum often prevented proper drainage of the latter even after incision had been made.

Dr. E. L. Shurley, of Detroit, did not believe that operations were always necessary. The laryngologist sees fewer of these cases than do the dentist and general surgeon. Acute cases, as after grippe, often get well of themselves, but in chronic cases curetting will often be necessary. He did not believe that there was positive evidence of infection through the mouth, but the opening into the nasal fossa would in his judgment offer far greater chance of such infection.

Dr. Makuen observed that the law of gravity did not seem to hold good in normal drainage of the antrum, as the opening was nearer the top than bottom. Drainage seemed to be regulated by some sort of capillary attraction.

Dr. G. A. Leland, of Boston, remarked that man was not always an upright animal and that when lying down the antrum would drain by gravity. If the natural opening could be kept patent he believed that many of these cases could be cured without operation. The Caldwell-Luc operation was really a combination of the methods of Mikulicz and Jansen.

Dr. M. R. Ward, of Pittsburg, reported two cases of

SEPTIC PHLEBITIS WITH THROMBUS AS A COMPLICATION OF PERITONSILLAR ABSCESS.

He had been able to find but three cases on record and was able to add two to the list as follows:

Case I. Woman, age thirty. Three weeks previously she had pain and soreness in the left tonsil, which subsided. Three days later a tumor appeared on the right side of the neck and there was a right peritonsillitis with enlarged post-cervical glands. Palpation did not detect any fluctuation. The muscles of the neck were swollen, fever developed, with evidences of pneumonia in the lower lobe of the lung on that side and of pus beneath the superficial fascia of the neck Death occured on the ninth day after a pyemic course. Autopsy showed a thrombus in the internal jugular with septic phlebitis running up to the tonsillar plexus.

Case II. German, age forty-two, male, who had an ordinary quinsy which was incised. Two days later there was a chill, with renewal of all throat symptoms. Death occurred on the sixth day after a pyemic course. Autopsy as in Case I, with in addition multiple small abscesses in the kidneys.

Dr. J. L. Goodale, of Boston, read a paper on

ACUTE SUPPURATIVE PROCESSES IN THE FAUCIAL TONSILS.

The paper was based upon a study of eight cases of intrafollicular abscess. He wished to call attention to the etiological relation of special bacteria to these cases, of the latter's relation to peritonsillar abscess, of their prognostic significance and clinical recognition. Streptococci were more numerous than staphylococci. Of the eight cases, two were followed by peritonsillar abscess. In all there was a severe infection, as evidenced by the swelling in the neck, temperature range and cervical adenitis. In most cases the tonsil presented no gross appearance which would suggest intrafollicular abscess. The latter varied in

size and number. The fibrinous exudation was more marked than in simple proliferative tonsillitis. Many polynuclear neutrophiles were found in the lymph channels near the base of the tonsils. The pyogenic infection of the follicles seemed secondary to that of the crypts and in the two peritonsillar cases there seemed to be a discharge of the abscess into the efferent lymph channels. In some cases the presence of subepithelial white specks may enable us to predict this special form of tonsillar inflammation and the latter may, by the rupture of the abscesses through the condensed tonsillar tissue to the surface, set up the condition described by Moure and other French writers as acute ulceriform tonsillitis.

DR. G. A. LELAND, of Boston, read a paper entitled

PERITONSILLAR ABSCESS.

He believes the best method of permanently relieving these cases is to make a long incision vertically through the tonsil and then to thoroughly explore through this incision with the sterilized finger the pus pockets. Circumtonsillar inflammation arises from an extension of the process in the lacunæ in the direction of least resistance. Cold, rheumatism, etc., mean nothing as exciting causes but a temporary lowering of vitality and of resisting power. The digital method above described is not dangerous. It is very painful, and a few whiffs of an anesthetic may be necessary. Its advantages are that the abscess is drained from the bottom, recovery is prompt, and there are no relapses. The patient is able to swallow liquids in six hours and solids in twelve. In case the incision is slow in healing, applications of iodine and glycerin are made to the bottom. This operation is really half a century old, but had fallen into disuse.

DR. THOMAS HUBBARD, of Toledo, reported cases of

PERITONSILLAR ABSCESS ASSOCIATED WITH DIPHTHERIA.

The first case was that of a farmer, age twenty, with acute tonsillitis. Five days later a right peritonsillar abscess developed. Examination of the deposit on the tonsils showed the presence of the Löffler bacilli, and antitoxin was administered. The next day there was evidence of membrane in the trachea, and dyspnea was so great that tracheotomy was immediately done. The patient stopped breathing, and artificial respiration for nearly an hour was necessary to re-establish this function. The patient lived only eighteen hours. Immediate cause of death was pulmonary edema. A second similar case was also described.

DR. F. C. COBB, of Boston, exhibited some photographs illustrating wax injections through the tonsillar crypts into the pharyngomaxillary space, the injections showing the same direction of extension as did the pus in the course of actual abscess cases.

DR. NEWCOMB mentioned a case recently reported by Sendziak of diphtheria associated with multiple abscesses in the various tonsils and empyema of both antral cavities. The phlegmon about the lingual tonsil opened spontaneously and a profuse hemorrhage ensued.

FIBROLIPOMA OF TONSIL.

History of the case was reported by DR. I. AMORY DE BLOIS, of Boston. The growth was the size of a peanut kernel and occurred in the left tonsil of a man aged forty. It had a thin pedicle attached near the top of the tonsil. Removal by the cautery snare under cocaine was effected without incident. A section of the growth was shown under the microscope.

(To be continued.)

Recent Literature.

A Class Book of (Elementary) Practical Physiology, Including Histology, Chemical and Experimental Physiology. By DE BURGH BIRCH, M.D., C.M., F.R.S.E., Professor of Physiology in the Yorkshire College of the Victoria University; Examiner in Victoria University; Additional Examiner in Edinburgh University. Philadelphia: P. Blakiston, Son & Co.

The first section of this class book deals with histology and contains material of considerable value to students, the table on p. 27 being remarkably good. In the second section the main experiments in chemical physiology are given in a clear and concise manner. Should a student perform carefully all the experiments given in this section he ought to have a good working knowledge of chemical physiology. This section is certainly not overburdened with chemical formulæ or symbols.

The third section deals with experimental physiology. The experiments considered are the ones usually taught in modern medical schools. The chapters entitled Electrical Considerations (xxvii, p. 183) and Dissection of the Frog (xxviii, p. 195) are very useful — the former to students having no knowledge of electric phenomena, and the latter points out clearly and emphasizes the preliminary and main steps necessary to a successful experiment.

The letter-press is good; some of the figures are clear enough, but the majority of them are bad, heavily drawn and coarsely printed.

The illustrations of apparatus are enough to discourage an average student. The main point in the apparatus shown seems to have been to construct as complicated a piece of mechanism as possible — perhaps with the object of teaching physics as well as physiology. Fig. 36, p. 207, showing a smoking chamber for drums is one of the most complicated apparatus that could possibly be constructed for this otherwise simple operation. However, outside of these drawbacks the book is of considerable value to beginners in the three sciences it considers.

A Compend of Human Physiology. Especially Adapted for the Use of Medical Students. By ALBERT P. BRUBAKER, A.M., M.D., Adjunct Professor of Physiology in the Jefferson Medical College, etc. Ninth edition. Philadelphia: P. Blakiston, Son & Co.

This book is entitled "Quiz Compend No. 4." The teaching of physiology on the Quiz Compend basis is certainly a short cut to mastering this intricate science. For these reasons the book should be appreciated by students, but they will probably be disappointed when examination time comes. Some of the most important branches of physiology are dealt with in a charmingly brief manner and others,

equally important, are dealt with in a briefer manner still; that is, they are not mentioned at all.

The physiology of internal respiration, apnœa, dyspnœa, internal secretion, come under the latter category, and the vagus nerve, heart, vasomotor system, blood pressure, electric currents in muscle and nerve are all dismissed in a very few words. The seat of urea formation on p. 157 is definitely settled and explained *in seven lines*, and on p. 163 the formation of urea is clearly demonstrated in the same number. Happy students! In the chapter on Reproduction and throughout the book the new spelling is used — fetal instead of fœtal, ameba instead of amœba and leukocytes instead of leucocytes — diphthongs are bothersome things to the modern writer. Perhaps this is the reason why apnœa and dyspnœa are not discussed in the book. The letter-press is fair and the illustrations — which are few and far between — are the best part of the book. They are all taken from the standard and large works of physiology. In the preface to the ninth edition the author speaks of the "continued demand" for the book, and hopes that it may "continue to meet the demand of the student class." Let us hope that the student's eyes may be opened and that he will give up trying to master the intricacies of science by studying books of this description, and that he will use his brain in the endeavor to learn by understanding and not — parrot like — learn scientific facts by heart.

On the Study of the Hand for Indications of Local and General Disease. By EDWARD BLAKE, M.D., Member of the Royal College of Surgeons, etc., etc. Second edition. Pp. xvi, 135. London: Henry J. Glaisher. New York: G. P. Putnam's Sons. 1899.

The volume before us is the second edition enlarged by 62 additional pages and numerous illustrations and that within four months from the appearance of the first edition. This testifies to the popularity of the book, and we think it well deserved. The author makes a consistent attempt to exhaust the possibilities of the hand as a means of diagnosis, and discusses various conditions and diseases in which the hand is or should be a factor in arriving at a diagnosis. Such a method certainly has its advantages in that it tends to insist upon a cultivation of the observation, and leads us to draw inferences from frequently unrecognized appearances. Its danger lies in its one-sidedness: to rely upon the appearance of the hand alone in any diagnosis whatsoever would tend to lead astray in a great majority of cases. "Is it possible," the author asks in his introduction," that a fairly respectable diagnosis might be based upon the hand alone?" We should doubt it, except in a very few instances; as a partial means of information, however, no doubt the hand may be utilized much more than it has been in the past. The book before us is certainly of value in bringing this point forcibly before us. The volume is well bound and printed, and profusely illustrated, and as a book of reference may well find a place in all libraries.

We would call attention to one decided error of statement. On p. 21 the author says: "Allied to Raynaud's disease are scleroderma and acroparesthesia, the latter condition being sometimes known by the somewhat cumbersome and ungraceful term, "erythromelalgia." The two conditions are quite distinct.

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283 WASHINGTON STREET, BOSTON, MASS.

THE BOSTON CITY HOSPITAL REPORT.

THERE are few institutions to which a greater interest attaches in this community than the Boston City Hospital. Its rapid growth, its exceptional equipment, and its great public services place it quite at the head of city institutions devoted to the care of the sick. We look forward each year with interest to its annual report, a document which this year is particularly satisfactory, on account of the number and extent of the improvements which have been made and which are described in detail.

Seven pages are taken up with a list of the visiting physicians and surgeons and the hospital officers. This in itself gives one an idea of the extent to which the work of the hospital has grown. The trustees report progress in all respects; particularly noteworthy has been the work put upon new buildings. The new surgical amphitheatre has been completed and formally opened since the appearance of the last report. Two new wards have been furnished with improved modern equipment, and the Vose House for nurses is progressing rapidly toward completion. In addition to this, the boiler house has been improved, and a new laundry built. During the period immediately following the war with Spain the hospital received and treated 602 soldiers, without in any way incommoding the regular patients. The work of the South Department for infectious diseases has justified all expectations. In 1898, 51 per cent. of all cases of diphtheria occurring in Boston were treated in the hospital. Comparison with previous years shows that the diminution in the ratio of death from diphtheria bears a direct relation to the increase in the percentage of cases receiving hospital treatment, apart from the use of antitoxin.

The report of the superintendent is largely statistical and of much interest as an evidence of the growth of the hospital in all its departments. It is stated that the training school for nurses, in the number of its graduates, now ranks fourth among the training schools of the country. Five hundred and thirty-five nurses have graduated since the foundation of the school.

The medical and surgical statistics follow, covering

something more than a hundred pages. They must be regarded as the least valuable part of the report, and are, in this respect, no exception to the usual hospital statistics every year published by innumerable institutions. To the general public such figures must be of little interest, and to the statistician they can be nothing more than a source of annoyance, so hopelessly confused is the classification, and so vague the distinction between symptoms and diseases. In the report before us, for example, we find in one place apoplexy, cerebral hemorrhage and hemiplegia classed as separate diseases; in another, we see multiple sclerosis and disseminated sclerosis given as distinct from one another. Under unclassified gynecological diseases are named the following conditions: bursitis, caries of ossicle, debility, hepatic colic, infancy. Under surgical diseases, among many others equally extraordinary, are apoplexy, hysteria, delirium tremens, premature birth, general paralysis. Since so much work is necessarily put upon this portion of hospital reports in general, it is unfortunate that a classification is not agreed upon by the various departments, that some sort of order may be brought out of the chaos, and such statistics rendered really serviceable. We simply take this report as an example of an almost universal failing.

The interest of this last City Hospital report is enhanced by two excellent plans of the hospital buildings and grounds, and several illustrations in the body of the pamphlet. We would cordially commend the report to those desirious of gaining a conception of the workings of a great hospital.

A PROPOSED CARD CENTRALBLATT.

A NEED which is growing greater year by year is a ready means of getting at the literature of any subject. Not only is the number of papers and communications on subjects connected with medical progress in its various lines increasing beyond the power of any one man to compass, but, unfortunately, the number of periodicals in which these communications are to be found is also rapidly increasing. The necessary consequence is that even the specialist in any one field is quite unable to keep up with the literature of his own subject in its original form. Recognizing this fact, many of the special journals, and within a short time some of the general ones as well, have published abstracts of papers, as a labor-saving device for their readers. This method is no doubt valuable, but such abstracts to be really serviceable must be most carefully done; the kernel of a research must be put in a few words, and yet we must be perfectly sure that no essential points are left unnoted. Many of the abstracts fall far short of this ideal and therefore are worse than useless, inasmuch as they are frequently positively misleading. A satisfactory method, therefore, of making all the literature of a subject accessible in the most condensed form remains to be elaborated.

The details of a plan have, however, appeared in the current number of *Science*, over the signature of Dr. W. T. Porter, of the Harvard Medical School, which seems likely to solve the problem, at least in part. Dr. Porter proposes to have abstracts of articles in physiology, though, of course, the plan may be indefinitely extended to other subjects, printed on cards, and indexed by authors in the usual way, from which subject catalogues could easily be made. The printing, he thinks, should be done by an institution designed for the dissemination of knowledge, like a public library, and the Boston Public Library has at present under consideration the plan of which we are speaking. After considering certain difficulties in similar plans heretofore proposed, for the details of which we would refer the interested reader to the original publication, Dr. Porter makes the following suggestions:

"These difficulties led me naturally to the idea of a centralblatt printed on cards. In a properly organized centralblatt the abstracts are as long as may be necessary to do justice to the author's results, and each abstract is written by an expert in the field in which the original investigation lies. The advantage of having such abstracts printed on library cards is plain. The original set, arranged alphabetically by authors' names and chronologically under each other, would give the principal results of each investigator throughout his whole career. Duplicates arranged according to cross-references printed on the upper and lower margin of each card would furnish not only a chronological list of the investigations on any particular subject, for example, on the chemical reaction of the gastric juice, but would without further search set forth the fruits of the studies mentioned. . . . It is agreed that this card centralblatt shall contain abstracts of original communications in physiology, including physiological chemistry, invertebrate physiology and the physiological action of drugs. Each abstract is to be written by a physiologist specially learned in the field in which the original belongs. Wherever possible the abstract is to be the work of the author himself, following the admirable suggestion of Dr. Bowditch. Abstracts are to be mailed to subscribers about three weeks after the appearance of the original in this country, and in six weeks in the case of communications published abroad."

It is proposed to make the limit of the abstract about 225 words, which a card of the index variety would contain. If the abstract be too long for one card, two or more could be used. The suggestion is that sets of these printed cards, about 6,000 yearly, be issued to subscribers and that they would represent the gist of all the work in physiology of the year, in a form upon which the most absolute reliance might be placed, owing to scrupulous care in the editing.

We hope this admirable scheme for physiological literature may be put into execution at an early date, and that it may ultimately be extended to various other scientific branches of medicine. As Dr. Porter in conclusion says, "The success of this undertak-

ing in physiology would mean the issue of similar publications in other sciences and the saving of much valuable time now wasted in unprofitable rummaging."

REPORT OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

A PRELIMINARY report of the work of the Congress has been issued in England as a Parliamentary paper. The results of the meeting are interesting and yet not new. Methods of prophylaxis are discussed, with special reference to ventilation, food and sanitary dwellings. Directions are laid down as to the disposal of sputum, and considerable stress is put upon the open-air treatment and the establishment of sanatoria. In general, much hope is expressed for the future, both as regards prophylaxis and treatment. It is becoming evident that tuberculosis is gradually losing its terrors as our knowledge increases. Nothing can do more toward lessening the ravages of the disease than a widespread recognition among the people of its cause, of the means of prevention, and of its rational treatment when acquired. Of interest is the fact that in the abstract before us no mention is made of tuberculin in treatment; its one recognized value is as a diagnostic test in cattle, and even that is not without its drawbacks.

MEDICAL NOTES.

A CASE OF SMALL-POX IN THE ARMY. — It is stated that a case of small-pox has been discovered in the Presidio Hospital at San Francisco, the patient being a volunteer private of the Thirty-first U. S. Volunteers.

MEMORIAL TO SURGEON-MAJOR EVANS. — Some months ago the death of Surgeon-Major Evans, of the India Military Medical Service, from plague, was announced. He contracted the disease while making post-mortem investigations of patients who had died of bubonic plague. A fund has been raised to erect a tablet to his memory and also to establish a prize in pathology at the University of Calcutta.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, September 20, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 62, scarlet fever 28, measles 2, typhoid fever 27.

TWO CASES OF TETANUS. — The death of a patient at the Boston City Hospital is reported. The disease was caused through a penetrating wound of a foot by a rusty nail. A second patient recovered. Both received antitoxin treatment.

EMERGENCY HOSPITAL REOPENS. — It is reported that the Emergency Hospital has reopened. Dr. G. W. Galvin will be surgeon-in-chief, and Drs. H. O. Marcy and E. W. Cushing will be consulting surgeons. A method is to be adopted through which, by the payment of a small fee, a person will be guaranteed medical and surgical treatment for one year.

DEATH OF A CENTENARIAN. — It is reported that Mrs. Sallie B. Jennings, of New Fairfield, Conn., died last week, aged one hundred and two years. She was in excellent health up to a short time before her death.

A NEW ASSOCIATION. — We are informed that the annual meeting of the National Hay Fever Association has recently taken place at Bethlehem, N. H. The main business of the meeting was the narration of the various experiences of the members, who represented every part of the country. Misery clearly loves company.

NEW YORK.

YELLOW FEVER AT QUARANTINE HOSPITAL. — No less than four of the passengers of the steamer *Lampasas*, which arrived from Galveston and Key West on September 7th, developed yellow fever. All the patients, two of whom were males and two females, were taken to the quarantine hospital on Swinburne Island, and treated by Dr. Doty with his yellow-fever antitoxin. Three recovered, but one, J. M. Burley, a clerk, whose family reside in Indiana, died on September 11th. His case was one of great severity from the outset, and the sudden advent of very cool weather was regarded as having an unfavorable effect.

BETTER ACCOMMODATIONS FOR SCHOOL CHILDREN. — The public schools were reopened on September 11th, and for the first time in many years in the Boroughs of Manhattan and the Bronx it was possible to accommodate almost all the pupils applying for admission. During the past few months eight large and finely equipped new school buildings have been erected, and six of them were entirely completed in time for the opening day. In the Bronx High School, which is the only one of its class in the city in which boys and girls are taught in the same classes, the system of co-education has proved so popular that it has been found necessary to provide the school with a second annex this year. In the Boroughs of Brooklyn and Queens the state of affairs is not so satisfactory, and a large number of children had to be turned away on account of the lack of accommodations.

REGULATION OF DISPENSARIES. — The amendment to the law regulating dispensaries which was passed by the Legislature last winter goes into effect the 1st of October, and is expected to have some effect in remedying the evils which have so long attended the conducting of these charities, although the measure is regarded by many as not sufficiently drastic. The amendment, known as the Murphy Act, after defining what a medical dispensary is, provides that all dispensaries in large cities must be licensed, and that no license shall be granted unless the applicants swear or affirm that the dispensary is for the benefit

of the public. The State Board of Charities is empowered to visit and examine every dispensary, and to revoke a license after due notice, by application to the Supreme Court, in case of violation of the law's requirements. It furthermore provides that no dispensary shall be permitted to be carried on in connection with a drug store or in a tenement house.

THE "OCEANIC" HELPS THE HOSPITALS. — The new White Star Line steamship *Oceanic*, the largest vessel in the world, which recently made her maiden trip across the Atlantic, was thrown open for inspection for one day, at a charge of fifty cents, the proceeds being devoted to hospitals in New York. A similar arrangement was carried out in Liverpool before sailing for the benefit of local charities, and the public interest in the big ship resulted in the realization of a considerable sum.

NEW YORK'S FIRST AUTOMOBILE AMBULANCE. — St. Vincent's Hospital, it is announced, is about to be presented with an automobile ambulance, propelled by electricity, which will be the first of its kind in New York.

A FREE BATH FOR HOBOKEN. — Richard Stevens and his sister, Mrs. C. B. Alexander, of Castle Point, Hoboken, have erected a free bath for the poor in the Hoboken tenement district. On the two upper floors are the bathrooms for men and women, and the first floor is to be fitted up for the use of clubs belonging to the Settlement House, a charitable organization established by their mother, the late Mrs. M. B. Stevens.

ARMY NOTES.

THE STATUS OF THE CONTRACT SURGEON. — The Secretary of War has decided that a contract surgeon on duty at a post or station where there is no commissioned officer present may receipt for funds intended for the payment of the enlisted men at that station and witness the payment thereof. This decision gives the contract surgeon a more definite and official status and it is hoped may be the first step in changes by which all medical men in the service may be commissioned and clothed with the authority that their duties require them to exercise.

RETIREMENT OF MEDICAL DIRECTOR TRYON. — An order has been issued from the Navy Department retiring Medical Director J. R. Tryon on September 24th. Dr. Tryon was until recently chief of the Bureau of Medicine and Surgery, and to him must be attributed in large measure the excellent results which attended the work of his department during the Spanish-American War.

GREAT BRITAIN TO BE REPRESENTED AT THE ASSOCIATION OF MILITARY SURGEONS. — Ambassador Choate has advised the State Department that the British Secretary of State for War has accepted the invitation of the Association of Military Surgeons to send a delegate to the annual meeting of this Society at Kansas City on September 27th next, Dr. McWaters, of the Royal Army Medical Corps, being deputed to attend. It is understood that the Association at this meeting will be requested to make Dr. Karl Rudberg, Fleet Surgeon Swedish Navy, an honorary member, in recognition of the excellent volunteer work performed by him in the care of the wounded at Siboney and later on board of a hospital transport returning to Key West.

THE HOSPITAL CORPS TO BE ENLARGED. — It has been decided to recruit the hospital corps on the basis of four per cent. for the total enlisted strength of the army. This brings the total up to about 4,000 men — or more than the strength of a brigade — of which about 3,300 are already in the service. Enlistment is being rapidly carried on, especially in the large Eastern cities, and an extremely high class of men is being obtained. A large proportion of the recent recruits are men whose former avocations particularly fit them for the work they will be called upon to perform — many of them having been trained nurses, pharmacists and medical students, with even an occasional doctor of medicine. At present, enlistment is progressing at the rate of about 250 men per month.

SCHOOL OF INSTRUCTION FOR THE HOSPITAL CORPS. — Recent orders establish a school of instruction for recruits of the hospital corps on Angel Island, in San Francisco Harbor. This school will be conducted on the same lines as the one at Washington Barracks and will receive all men enlisted in St. Louis and points further west. In view of the desire to send all available men to Manila before the opening of hostilities, it is not thought that more than one month's instruction will be possible in the near future before the men are sent on transports.

Miscellany.

HAFFKINE'S PLAGUE PROPHYLACTIC.

A PRELIMINARY note by C. Balfour Stewart on some experiments to determine the comparative efficacy of the different constituents of Haffkine's plague prophylactic has appeared in the *British Medical Journal* and is as follows:

A number of rabbits were inoculated with increasing doses of a young culture of living plague in broth, and the somewhat unexpected result was found, that the rabbits which received the larger doses showed a smaller mortality. I thought it possible that during the growth in broth the latter had acquired sufficient prophylactic properties to render the animal immune to the microbes contained in the broth culture injected.

To see whether the prophylactic property lay in the broth altered during the growth of the microbe or in the sediment, several sets of experiments were done in which the broth was filtered through a porcelain filter. The sediment of a certain quantity of living plague culture was found to be more virulent than the same quantity of broth culture unfiltered when injected into rabbits.

Some rabbits were inoculated with the filtrate alone, others with the sterilized sediment alone, and immediately afterwards injected with a suspension of living plague

from an agar tube. The result seemed to show that both the filtrate and the sterilized sediment possessed prophylactic properties.

Immunity seems to be conferred even when the animal is inoculated with the prophylactic immediately before the injection of plague.

In testing the virulence of a plague culture, it is evidently important to use only a very young broth culture or an agar culture.

THE SUPERSTITION OF SPITTING.

THE following, quoted from the *Medical Press and Circular*, gives one an idea how deeply rooted the obnoxious habit of spitting is, against which we are making such vigorous efforts to legislate. We are apparently suffering from the remains of a superstition: "The habit of promiscuous expectoration is an uncleanly, disgusting one, but how curious it is that it should be environed with so much superstition. In days of antiquity spitting was resorted to in order to ward off dangers, and up to the present time luck is wooed and misfortune avoided by the process of spitting. New-born children are treated to a lavish expectoration by midwives in certain parts of the country; fishermen spit upon their hooks after baiting them, and it is considered to be absolutely essential before washing in the same basin in which a friend has washed to spit into it, for otherwise a quarrel would be sure to follow. But it is on the Continent that the superstition of spitting seems to reach its worst degree. In Oldenburg, for example, the loathsome custom prevails of always spitting three times into the kneading trough. Again, babies in Hungary are especially singled out as objects of the superstition; the custom there is to spit into the babies' faces in order to bring them good luck. Imagination almost fails to picture the filthiness and danger of such a disgusting act as this. In Silesia and Bohemia, persons generally spit three times when they meet an old woman, but it is quite difficult to conceive why the presence of an aged female should thus call for such a profligate evacuation of the salivary secretion under these circumstances. Again, in Sweden, a great deal of superstitious spitting seems to take place. Persons, for example, spit into their beds before retiring; playing cards are spat upon when the luck is bad, and every new suit of clothes is made the object of a gross expectoration, but for what reason it is quite impossible to imagine. Superstitions are said to die hard; and it would seem, from the above facts, that the one under discussion has been endowed with a phenomenal vitality. Despite its absurdity, filthiness and unhygienic character, it has still survived; whereas on sanitary grounds, it should, without further loss of time, be 'coffined and confined' beyond all reach of resuscitation."

Correspondence.

SOME POINTS REGARDING APPENDICITIS.

BOSTON, September 15, 1899.

MR. EDITOR: — A number of treatises have been written on the subject of appendicitis, and yet there has been no satisfactory classification of the disease. In my judgment, the various cases should be divided into three classes, first, simple appendicitis; second, appendicitis with an abscess circumscribed or diffused; third, appendicitis with suppuration and perforation of the appendix, with pus in the peritoneal cavity, with septic peritonitis and general septicemia.

It certainly is incorrect to designate the second and third classes as simply appendicitis, although they are advanced stages of the same disease; it is misleading to the public and unfair to the surgeons that operate, as the mortality after operations in uncomplicated cases is comparatively small, whereas in the second class, the mortality is much greater and when recovery occurs, convalescence is greatly protracted. In the third class recovery is not to be expected.

The surgeon who is so fortunate as to have a large number of uncomplicated cases will have a greater reputation as an operator than his equally skilful neighbor who has been unfortunate in the necessarily fatal character of his cases. Now a proper classification of the disease, strictly adhered to in all reports of the operation, would give the profession more valuable comparative statistics, place the surgeon in a proper light, and render the community at large more intelligent as to the necessity of early operations and thus be the means of saving life.

Every general practitioner of experience *knows* that many cases of recent appendicitis may be relieved without an operation, but that recurrences are the rule. The writer has seen four well-marked cases within as many months, that were completely relieved by hypodermic injections of morphia and atropia, with small doses of sulphate of magnesia and calomel, repeated hourly until copious watery discharges from the bowels were produced, giving immediate relief. One of the cases has since recurred, and has been successfully operated upon at the Massachusetts General Hospital. If the action of the above remedies fail to give relief, I advise an immediate operation, as in such cases delays are dangerous.

Who should operate? Only those surgeons who have had a thorough experience in this class of cases and who have acquired tact and skill in performing the operation. The would-be surgeon, who sees three or four cases a year and whose knowledge of anatomy, general and special, is very limited, and who consumes half an hour mutilating the cadaver in an almost fruitless attempt to find the appendix, is hardly a safe person to let loose among the living.

Every person, no matter how humble, should have the best possible chance for life and the best result, and for an audacious pretender to attempt the operation, using the poorest person in the community as material for a doubtful experiment, is simply criminal and illustrates Pope's line, "That fools rush in where angels fear to tread."

B. F. CAMPBELL, M.D.

METEOROLOGICAL RECORD

For the week ending September 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r.* 8.00 A.M.	We'th'r.* 8.00 P.M.	Rainfall in inches.
S....3	29.85	69	78	60	94	86	90	S.W.	S.W.	3	14	O.	O.	
M.. 4	29.97	64	71	58	69	72	70	N.W.	N.E.	19	5	C.	C.	.04
T....5	30.05	62	73	52	75	75	75	S.	S.W.	3	10	C.	C.	
W...6	29.96	64	75	54	70	51	60	W.	N.W.	15	12	C.	C.	
T...7	30.13	62	73	51	55	58	56	N.	S.W.	16	12	C.	C.	
F....8	29.85	70	81	60	85	64	74	S.W.	N.W.	18	5	C.	O.	
S....9	30.03	62	67	58	71	80	76	N.	S.E.	12	3	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 9, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1306	566	16.16	12.72	10.88	1.68	2.24
Chicago . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	168	60	16.20	8.40	7.80	3.60	.60
Baltimore . .	506,389	160	74	26.46	6.30	20.16	3.15	2.52
Cincinnati . .	405,000	103	—	8.82	15.68	6.86	.98	.98
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	114	42	31.68	4.40	19.36	8 80	.88
Washington .	277,000	117	43	24.65	7.65	10.20	8.50	4.25
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	54	22	22.10	9.25	16.65	1.85	—
Nashville . .	87,754	31	12	16.15	16.15	9.69	3.23	—
Charleston . .	65,165	29	9	17.25	13.80	13.80	—	—
Worcester . .	108,240	36	15	24.93	8.31	22.26	2.77	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	27	14	14.80	18.50	11.11	—	—
Lowell . . .	88,641	34	19	44.10	14.70	38.22	—	5.88
Lynn	66,703	22	6	20.75	4.15	12.45	—	—
New Bedford .	66,340	24	7	20.75	8.30	16.66	4.15	—
Somerville . .	68,101	9	3	22.22	11 11	22.22	—	—
Lawrence . .	77,263	24	19	20.75	8.30	16 66	4.15	—
Springfield . .	56,501	12	8	58.31	8.33	33.32	—	16.66
Holyoke . . .	43,424	18	6	16.66	5.55	11.11	5.55	—
Brockton . . .	37,278	5	1	—	—	—	—	—
Salem	36,883	15	4	13.33	—	13.33	—	—
Malden . . .	34,613	4	—	25.00	50.00	25.00	—	—
Chelsea . . .	33,468	11	—	27.27	9.09	—	—	—
Haverhill . .	32,022	7	4	14.28	—	14.28	—	—
Gloucester . .	30,589	5	2	40.00	—	—	—	40.00
Newton . . .	29,716	7	3	28.56	—	14.28	14.28	—
Fitchburg . .	29,438	12	5	16.66	—	8.33	8.33	—
Taunton . . .	29,167	6	1	—	—	—	—	—
Everett . . .	25,338	9	6	11.11	—	11.11	—	—
Quincy . . .	23,549	8	3	37.50	—	37.50	—	—
Pittsfield . .	22,643	8	2	12.50	12.50	12.50	—	—
Waltham . .	22,296	4	—	25.00	25.00	—	25.00	—
North Adams .	20,971	4	2	—	—	—	—	—
Chicopee . .	17,842	8	4	25.00	12.50	25.00	—	—
Medford . . .	16,511	3	3	—	33.33	—	—	—
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	14,032	3	1	—	33.33	—	—	—

Deaths reported 2,417; under five years of age 970; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 467, consumption 257, acute lung diseases 173, diarrheal diseases 287, typhoid fever 63, diphtheria and croup 46, whooping-cough 22, cerebro-spinal meningitis 14, measles 10, scarlet fever 8, erysipelas 5.

From whooping-cough New York 16, Boston 2, Pittsburg, Providence, Charleston and Cambridge 1 each. From cerebro-spinal meningitis New York 7, Lynn and Chelsea 2 each, Boston, Washington and Providence 1 each. From measles New York 9, Pittsburg 1. From scarlet fever New York 4, Boston, Pittsburg, Washington and Chelsea 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 2d, the death-rate was 25 5. Deaths reported 5,571; acute diseases of the respiratory organs (London) 131, diarrhea 1,441, whooping-cough 83, measles 69, fever 62, diphtheria 61, scarlet fever 26, small-pox (Hull) 1.

The death-rates ranged from 18.5 in Bristol to 38.1 in Preston; Birmingham 28.6, Bradford 26.3, Cardiff 28.9, Gateshead 23.0, Hull 27.4, Leeds 19.9, Liverpool 33 7, London 22.1, Manchester 30.5, Nottingham 25.9, Portsmouth 32.5, Swansea 18.6.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING SEPTEMBER 7, 1899.

WHITE, J. H., surgeon. Directed to proceed to National Soldiers' Home, Va., for special temporary duty. September 1, 1899.

MAGRUDER, G. M., surgeon. To proceed to Port Tampa, Fla., for special temporary duty. September 1, 1899.

WERTENBAKER, C. P., passed assistant surgeon. Granted leave of absence for fourteen days on account of sickness. September 8, 1899.

SMITH, A. C., passed assistant surgeon. To proceed to Tortugas Quarantine for special temporary duty. September 4, 1899.

GARDNER, CHARLES H., passed assistant surgeon. Granted leave of absence for one day. September 5, 1899.

WICKES, H. W., passed assistant surgeon. Leave of absence extended four days. September 1, 1899.

FRICKS, L. D., assistant surgeon. To proceed to Key West, Fla., for special temporary duty. September 4, 1899.

CORPUT, G. M., assistant surgeon. Relieved from duty at Egmont Key Detention Camp, Fla., and granted leave of absence for thirty days on account of sickness. August 30, 1899.

KING, WALTER W., assistant surgeon. Relieved from duty at Reedy Island Quarantine, and directed to proceed to New Orleans, La., and report to the commanding officer for duty and assignment to quarters. September 4, 1899.

THORNBURY, F. J., a sistant surgeon. Relieved from duty at Baltimore, Md., and directed to proceed to the Immigration Depot, New York, and report to the commanding officer for duty. August 25, 1899.

TROTTER, F. E., assistant surgeon. Relieved from duty at Immigration Depot, New York, and directed to proceed to Mullet Key Detention Camp, Fla., and assume command. August 25, 1899.

BEAN, L. C., acting assistant surgeon. Granted leave of absence for one day. August 26, 1899.

BROWN, B. J., Jr., acting assistant surgeon. Granted leave of absence for three days. September 1, 1899.

DUFFY, FRANCIS, acting assistant surgeon. Granted leave of absence for two days. September 2, 1899.

GOLDSBOROUGH, B. W., acting assistant surgeon. Granted leave of absence for one day. August 30, 1899.

SMITH, A. W., acting assistant surgeon. Relieved from duty at Cape Charles Quarantine and directed to rejoin station at Baltimore, Md. August 25, 1899.

PECK, F. H., hospital steward. Relieved from duty at Hampton, Va., and directed to proceed to Mullet Key Detention Camp, Fla., for special temporary duty. September 1, 1899.

OLSEN, E. T., hospital steward. To proceed to Tortugas Quarantine for special temporary duty. September 4, 1899.

APPOINTMENT.

EDWARD J. AGNELLY, of New York, to be junior hospital steward. September 1, 1899.

BOARD CONVENED.

Board convened to meet at New York, N. Y., October 4, 1899, for the examination of candidates for appointment as assistant surgeon in the Service and officers for promotion. Detail for the board: H. W. AUSTIN, surgeon, Chairman; G. W. STONER, surgeon; C. E. BANKS, surgeon, Recorder.

SOCIETY NOTICE.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION. — A meeting of the Association will be held at Chicago from October 3d to 6th inclusive. Harold N. Moyer, M.D., is the Chairman, and S. C. Stanton, M.D., the Secretary of the Committee of Arrangements.

No essay or report shall be permitted to occupy more than twenty minutes, and discussions of reports and papers shall be limited to ten minutes for each member.

RECENT DEATHS.

CHARLES THOMAS ROBINSON, M.D., of Harlem, New York City, died suddenly of cardiac disease, on September 11th. He was twenty-six years old, and born in New York. He was graduated from the Medical Department of Columbia University in 1895, and afterwards served on the house staff in St. Catharine's Hospital in Brooklyn. Dr. Robinson had been married less than a month.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Trustees of the Newport Hospital. Presented to the Corporation at its Twenty-sixth Annual Meeting, July 11, 1899.

The Ohio Medical University Imbroglio: Personal Malice, Jealousy and Ambition, vs. the Demands for Higher Standards. Cincinnati: Press of Curts & Jennings.

The Evolution of Modern Therapy: An Address read before the Society of the Alumni of the Medical College of Virginia. By Simon Baruch, M.D., New York. Reprint. 1899.

Asthma: Recent Developments in its Treatment. By Ernest Kingscote, M.B., C.M., L.R.C.S. (Edin.), Fellow of the Medical Society of London, etc. London: Henry J. Glaisher. 1899.

The Mechanics of Surgery: Comprising Detailed Descriptions, Illustrations and Lists of the Instruments, Appliances and Furniture Necessary in Modern Surgical Art. By Charles Truax. Chicago 1899.

Surgical Nursing. By Anna M. Fullerton, M.D., Clinical Professor of Gynecology in the Woman's Medical College of Pennsylvania, etc. Third edition, revised and enlarged, with 69 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

THE COMPLETED HISTORY OF A CASE OF TOTAL EXTIRPATION OF THE STOMACH, WITH REMARKS UPON THE SURGICAL TREATMENT OF GASTRIC CANCER.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

The early history of this case, with a description of the operation and progress of the patient for the following five months, will be found in the *Boston Medical and Surgical Journal* of October 20, 1898.

The patient's condition continued for some time to encourage the hope that many years of comfortable life were before her. She was able to take sufficient nourishment of great variety. There was no difficulty in assimilating what she did take. Though she gained little if any weight, she was able to go out to drive, and to be up and about the house. There was, however, in the epigastrium a sensation of drawing or dragging more or less pronounced, as if there were undue tension in front.

Careful examinations were repeatedly made by Dr. Defriez to detect any evidence of recurring disease, but they were always negative. It seemed not too much to hope that the dissection had been extensive enough to ensure a permanent cure, especially in view of the fact that at the time of operation the disease seemed to be confined to the stomach; there was apparently no involvement of liver, pancreas or lymphatics. The point of greatest improvement was reached about the first of November. The wound then unexpectedly reopened, after some pain and discomfort in the left hypochondrium.

On November 15, 1898, I made a careful examination. There was a small sinus at the centre of the wound, extending inward and slightly upward in the direction of the line of suture, and evidently connected in some way with it. From this sinus there was an escape of fluids and of pus. To the left, between the wound and the rib margin, there was an induration involving apparently the transverse colon and the muscles of the abdominal wall. The mass was smooth and resistant; it became gradually merged into the surrounding parts, having no distinct border and no irregularities.

In view of the fact that the sinus had reopened, and that there was probably more or less exudate still existing, I hoped that the mass to the left was simply an extension of the inflammatory process, and that with the good drainage then existing the whole would subside. There was ground for this hope, for once or twice before there had been a fistula which promptly closed. But no improvement took place. Not very long afterward symptoms of intestinal obstruction began to appear. There was at first a distinct paroxysmal peristalsis, shown by knotted intestinal coils, which were clearly visible through the abdominal walls. This symptom, though regarded by some as pathognomonic of obstruction, and though at times ominous, occasionally is conspicuous in disturbances that are purely functional. In such cases an active peristalsis may be distinctly visible, especially if the abdominal walls are thin. In this case, however, the symptom was regarded with some apprehension — an apprehension that subsequent events fully justified. The peristaltic movements soon became violent and painful, and were attended by the sounds which gas makes in passing a point of constriction. With these symptoms the right side of the abdomen began to be more prominent than the left, until it was clear that the ascending and the transverse colon were abnormally distended.

When the symptoms of intestinal obstruction appeared, the strength began to fail with alarming rapidity. The sinus continued to give outlet to more and more of the food taken; it became in reality an esophageal fistula, or a duodenal overflow. As soon as the colon became totally obstructed, the intestines above gradually filled to over-distention until their contents were regurgitated. As there was no stomach to receive the fluids, and as the open sinus afforded an outlet, they simply overflowed and escaped through this channel. The explanation of the appearance and the persistence of the sinus thus became clear, but the cause of the stricture still remained doubtful. It was hoped, as I have said before, that the lumen of the colon had been narrowed by an exudate which would in time become absorbed, and that the large amounts of nourishment which the patient was taking would restore her strength. The occasional occurrence of constrictions after end-to-end suture of the intestines justified the hope. Unfortunately, however, nothing took place to indicate that so favorable a solution might be expected. The cecum, ascending and transverse colon became enormously distended. As the obstruction became greater there was an increase of the overflow at the sinus, which acted as a safety valve, preventing distention of the intestine beyond a certain point and rendering vomiting impossible.

A chronic intestinal obstruction like this causes vomiting which is at first intermittent, but which later becomes constant, until everything is regurgitated, even the contents of the large intestine. In this case, however, there was no return of fluids from below the ileocecal valve, and nothing stercoraceous at any time; for as soon as the intestines became sufficiently distended, fluids would escape from the sinus. Indeed, fluids taken by mouth passed directly into the duodenum. If the duodenum was already filled, the fluid would immediately overflow. Why there was no regurgitation of fecal matter I do not know, for there was free passage into and out of the duodenum. The sinus remained patent because fluids were constantly escaping through it.

The patient died February 19, 1899. The autopsy was made February 20th. The mass at the left of the epigastrium was recurrent cancer, which had infiltrated the peritoneum under the rectus, and had spread through and among the small intestines. There were nodular masses in the mesentery of both large and small intestines. Minute nodules were scattered everywhere. Near the splenic flexure the lumen of the colon was totally obstructed. Beyond this point the bowel was collapsed; above it was enormously distended.

The line of suture was perfect, except for a sinus about the size of the little finger. This sinus started at the left of the suture line, and passed downward, outward, and to the left. The orifice of the duodenum was large enough to permit the free passage of food; there was no constriction, though the parts were closely bound together by a firm exudate. There was

[1] Read before the Massachusetts Medical Society, June 13, 1899.

no sign of recurrence at the line of junction. Had there been no recurrence in the intestines or elsewhere, the food would have passed along without hindrance.

From the history of this case as thus briefly outlined, it may be concluded: first, that the patient's health would have been fully re-established had there been no recurrence of the original disease; secondly, that the sufferings were due to the mechanical effects of a chronic obstruction rather than to cancer itself; finally, that esophago-duodenostomy is technically possible in a certain percentage of cases.

This case adds one more to the deplorable number of recurrences after even the most extensive operations for cancer.

In admitting the frequency of recurrence we must not forget that many cases of cancer are permanently cured by operation. I do not now refer to cases of cancer of the stomach, but of cancer generally. The number of the former is small; their result well known. As to cancer of other organs, however, upon which numerous operations are performed, a large proportion of the cases are lost sight of; and it is only after systematic search that the true percentage of recurrences is known.

In cancer of the uterus, for instance, which, from its situation, does not permit the removal of as wide a margin of healthy tissue as cancer of the stomach, one is often surprised to learn that cases practically hopeless, almost inoperable, now and then are permanently cured. Recently I was informed of the present excellent health of two patients upon whom I had operated for cancer of the uterus in 1893. I found from the hospital records that both cases had been pronounced unfavorable; that in both the vaginal mucous membrane was somewhat affected. Never having collected my cases of hysterectomy for cancer, I had not heard of these recoveries, although I had seen several apparent cures in patients whose subsequent history I had followed. These two patients, as I say, are living and well to-day. Many other patients with cancer or with sarcoma who I supposed, from the conditions found at the time of operation, had surely succumbed long since to recurrence of the disease are now living and well. The large number of patients who do present themselves with unmistakable recurrences leads one to make a higher estimate of the number of such cases than perhaps the truth warrants; for many patients expect as a matter of course to be cured, and when they are cured, think it not worth while even to mention it to the physician. Recently, for example, a woman came to me upon whom I had operated in 1889, for extensive carcinoma of the breast. A year or two later I removed a large recurrent mass from the scar. Some eight years have elapsed since this second operation, and I now find her perfectly well, though I took it for granted that she had died long ago. I am convinced that we are inclined to take too hopeless a view of these cases, and to conclude from many recurrences that most cases of cancer are necessarily fatal.

In cancer of the breast there is a possibility of taking a wider margin of sound tissue than in cancer of the uterus, and when the lymph glands are infected they are in a space that can be freely dissected. In cancer of the stomach, however, though the margin may be perfectly satisfactory, the lymphatic system, if infected, does not permit of dissection. If it is assumed that all cases of cancer have, long before operation is possible, invaded the nearest lymph glands, then it is clear that no operation for radical cure can be undertaken. The close proximity of all the abdominal viscera to the great lymph channels makes it theoretically impossible to prevent remote infections, or to overtake even the nearest ones; but it certainly is true that cancer of the intestine, if thoroughly excised early in the disease, is in many cases completely cured, or, if not completely cured, relieved for many years. From many operations upon the uterus through the abdomen, I am convinced that invasion of the pelvic lymph glands is a late metastasis, and that it is often absent. Secondary deposits of cancer in the liver and other remote viscera I have seldom, if ever, observed in cancer of the uterus. So in cancer of the intestine many cases of extensive disease are apparently without secondary deposits.

I have explored many cases of cancer of the stomach, hoping to be able to perform radical operation. In the great majority of these cases the stomach itself has been so extensively infiltrated — the infiltration extending even to the contiguous viscera, the pancreas, or the liver — that no operation has been advisable. In very few have I noticed an enlargement of the nearest lymph glands. In the case herewith reported there was no engorgement of lymph glands to be seen either at the operation, or at the autopsy: the recurrence was apparently by direct extension.

The experience gained in this case, in my opinion, encourages rather than forbids further attempts in the surgical treatment of gastric cancer. The case undoubtedly goes to show that recurrence is the rule, even after the most extensive operations; but it helps to prove that more extensive operations are possible than were ever before known. If, therefore, patients can hereafter be brought to exploration not when the disease is so pronounced that the diagnosis is plain, but in the very beginning, when it is first suspected, such radical measures as pylorectomy or gastrectomy promise much. Exploration at this time would often demonstrate the very beginning of cancer; the patient's strength would be sufficient to warrant a recovery from the operation; the wide margin then possible from thorough dissection would improve greatly the chances of permanent cure.

Although in the present case the patient herself, a very intelligent woman, realized fully the nature of her disease and the great difficulties of the operation, with the chances of recurrence, yet she expressed herself at the close as convinced that the struggle was not worth while. This feeling was natural, and we all had great sympathy for her in it. Yet during the convalescence from the operation, and for some months afterward, her life was filled with happiness that she had withstood successfully the dangers of the operation, and with hope that she would escape a recurrence of the disease. In her discouragement at the very close of an unsuccessful fight she expressed herself as most people undoubtedly would. In the last weeks of her life the patient's condition was certainly deplorable. There was evidently a recurrence of cancer in the intestines, with complete stoppage somewhere near the splenic flexure; there was enormous distention of the colon; there were occasional violent paroxysms of peristalsis; and there was a profusely discharging sinus in the epigastrium. Moreover, there was emaciation and gradual loss of strength,

though a large amount of nourishment was taken. For the reasons given in the foregoing paragraphs the food taken escaped quickly through the sinus. Yet up to the last weeks the patient was buoyed up by the hope that the worst would soon be passed, and that she would regain her health.

The suffering in cancer of the stomach in these later stages is very great; there is the distressing weakness, the great cachexia, the pain, the loss of appetite, the constant vomiting of decomposed food mixed with blood and cancerous discharges. There is, in a word, that deplorable state of things which makes cancer so justly dreaded. In the majority of cases the patients are not only willing to undergo the most dangerous operation, but they beg to take the chance, if it is but one in a thousand. The disappointment which such unfortunates feel when told that there is not even that chance, that no operation is justifiable, is almost beyond expression. Under such circumstances the sympathy of the surgeon leads him at times perhaps to undertake an operation as a forlorn hope, when, uninfluenced by the patient's despair, his decision would be against intervention. Many patients beg for operation because they would rather run any risk, no matter how great, than live as they are. If the operation proves the hopelessness of their case, they know at least that an attempt has been made to save them.

It is true that in some cases of gastric cancer there is comparatively little suffering. Such are the exceptions, however. They rarely are suitable cases for operation because the diagnosis is made late, and the disease is too far advanced for reasonable hope of cure. To this class belong the rapidly growing forms of cancer in the comparatively young. The disease progresses with great rapidity and death soon ends the suffering.

The suffering in the two classes of cases is, in my experience and judgment, much less with operation than without. I have seen not only the despair and suffering in the inoperable cases, but the suffering in those cases in which successful operation has been performed. The truth is that the former greatly exceed the latter and justify extensive operations when extensive operations are possible. If the patient upon whom it is proposed to perform such an operation, or his friends, hear the plain truth they then have an opportunity for making their own choice. This opportunity should be given to each patient, and the facts should be stated as clearly and as candidly as it is possible to state them. Then, no matter what happens, the surgeon will feel that he has given to his patient that advice which he would wish to have given to himself.

In the present case it was impossible beforehand to tell, or to suspect even, how severe an operation was at hand. The case seemed, on the chances, absolutely hopeless, and I did not in the least expect to perform a radical operation, although I was prepared to do so. The unlooked-for condition of things found — the distinct localization of the tumor, the great laxity of both duodenum and esophagus, the absence of complications, the extraordinary calmness and great strength of the patient — all these things made the duty perfectly plain. At that time not enough was known of the ultimate results of gastrectomies to be guided by them, for the cases operated upon were all reported as doing well. There was every reason for hope. After the operation every one was pleased that a radical attempt at cure had been made. It was only when the hopelessness of the case became apparent and the patient's great sufferings were observed, that regrets were expressed, and I admit that such regrets were but natural. But, after all, the regret that patients have been allowed to die without an attempt having been made to save them is much harder to bear than that felt when everything has been done which might bring relief.

A few technical points seem of importance as illustrated by this case.

The feasibility of extensive resections upon the stomach depends, first, upon the laxity of duodenal and of esophageal attachments. Unless the stomach can be drawn well out of the wound, and unless both duodenum and esophagus are lax and easily brought together, there is no use in attempting an esophagoduodenostomy, and the jejunum or some other coil of small intestine must be used. In case neither can be brought up to the esophagus, a theoretical way would be to close the esophagus, and bring the duodedum or the jejunum to the wound for an artificial mouth.

Even when the parts permit full approximation, it may be extremely difficult, if not impossible, to make a good joint, owing to the configuration of the thorax. In some subjects the rib margins are close together, the diaphragm and the subphrenic space dark and inaccessible. In such cases the technical difficulties of suturing are great, and a Murphy button should be used. This beautiful device should be at hand in all proposed resections of the stomach and intestines. If the patient's strength permits, however, I prefer to use needle and thread without mechanical aids. I should use the button when saving of time is essential and suturing difficult and unsatisfactory.

The objection to the use of silk is that it may cause a persistent sinus. This is especially liable to happen if there is sepsis from leakage. The importance of this disadvantage is, however, much overstated. As a practical thing, even in septic wounds, silk gives little trouble. I use it for everything, except for ligation of a gangrenous appendix or a septic Fallopian tube. Catgut also may cause a sinus. I have seen exfoliation of chromicized and of simple catgut. In operations upon the stomach silk seems to me essential because it is strong, durable, and does not slip. With catgut, however, I never feel safe if vessels of considerable size are tied.

Great care should be taken to prevent extravasation during the operation, though I cannot but think that the dangers from a contaminated field in gastric and intestinal surgery are exaggerated. Large masses of gauze so placed as to catch the discharges reduce to a minimum the risk of contamination. Although every such operation is necessarily septic, the deaths from sepsis are extremely rare — a fact that is due, in my opinion, to the use of provisional gauze drainage. So far as I can recall the cases, but one of my patients has died of general peritonitis after deliberate resection for a lesion not septic in itself. Even in resection for intestinal necroses (strangulated hernias and the like), the small number of deaths have been caused by shock rather than by peritonitis.

The use of temporary wicks at the line of suture

seems to me essential. No joint in enterorrhaphy is free from the danger of extravasation — even if the most perfect of mechanical devices is used. In a case of gastro-enterostomy[2] in which the joint made with a Murphy button seemed absolutely secure, death followed sudden flooding of the peritoneal cavity from sloughing outside the line of approximation. On the other hand, I have seen no trouble follow the use of gauze. After simple gastrotomies, or simple linear enterostomies in which the fitting is perfect, I have usually dispensed with gauze. But in all cases of doubt I have as a personal preference used wicks. The better the apposition the smaller the wick and the shorter the time it is allowed to remain. If by the second or third day the gauze is uncontaminated, it may be withdrawn and the wound may be closed.

A point in connection with the removal of a large portion of the stomach is the danger of gangrene of the transverse colon. In Gaussel's tables there are several cases in which death was caused by this complication. The reason is that in tying off the greater curvature of the stomach the mesocolon is accidentally included, and the blood supply to the colon cut off. In a recent case of gastrectomy personally reported to me by the operator, the patient did perfectly well for a week, when death took place from gangrene of the colon. It was found that the blood supply had been cut off in tying the attachments of the greater curvature. In the present case a small segment of the mesocolon was tied, but the discovery was made before enough had been removed to compromise the safety of the colon. In a case of gastrectomy recently reported by Kocher, death was due to gangrene of the transverse colon.[3] The close anatomical relation between the omentum at the pyloric end of the greater curvature and the transverse mesocolon makes the mistake of including both instead of the omentum alone peculiarly likely to happen, especially if the suturing is begun at the pylorus and continued toward the left. The planes of omentum and transverse mesocolon are in practical contact at the pylorus, though they gradually become separated toward the spleen.

The present status of the treatment of cancer of the stomach may be briefly outlined as follows:

(1) Medical treatment, purely palliative, which has for its object the lessening of suffering and the prolongation of life.

(2) Surgical treatment, which endeavors to accomplish complete relief of suffering and restoration to perfect health; or at least relief from the most distressing symptoms.

Some cases justify only medical treatment; some require palliative operations. Are there not some that demand an attempt at least at radical cure?

It may be well here to emphasize certain well-known facts. Cancer of the stomach is deplorably frequent, forming 21.4 per cent. in all cases of cancer (W. H. Welch, quoted by Osler). In 1,000 autopsies at John Hopkins (Osler) 39 showed cancer of the stomach. The disease is hopeless under any but radical operative treatment. The suffering, as a rule excessive, is caused chiefly by mechanical and relievable conditions dependent upon the presence and situation of the tumor more than upon its nature. The principal manifestations of suffering are vomiting, distress, pain and starvation.

The only medical relief is from the free use of opiates. Death is welcome. Surgery offers for temporary relief of symptoms dependent upon mechanical causes, mechanical remedies reasonably safe in their application. For radical cure surgery offers a reasonable hope through operations of great difficulty and danger.

The stomach presents a field for surgical work which has exceptional anatomical advantages. It is easily accessible; its walls are so thick and flexible and broad that they permit extensive and ingenious plastic operations. The cut edges are easily approximated and fitted, the sutures are firmly held, and union is strong. The blood supply permits easy control, and hemorrhage during operations is trivial.

The stomach may be thoroughly explored through a comparatively small incision; it may be opened temporarily or permanently. When dilated, it may, by plaiting, be contracted and the mechanical causes of the dilatation may be removed; faulty shapes and faulty positions may be rectified; foreign bodies extracted. Such operations, even when performed not upon the perfectly well, but upon the considerably reduced, have an insignificant danger. We have but to recall numerous operations successfully performed in Boston to realize the brilliancy of this field for operation upon the comparatively well for mechanical lesions other than malignant. Even the more extensive operations upon the stomach, such as those necessitated in the removal of benign tumors, of cicatrices, of ulcers, show a brilliant record. But when the disease to be combated is a malignant one, when the operation to be successful demands the removal of a portion or even the whole of the gastric walls, and when the dangers of these formidable operations must be withstood by patients weakened by prolonged suffering and inadequate nourishment, the results have been and cannot but be discouraging. It is hardly necessary to say that this difference in results between malignant and non-malignant cases depends upon the far-reaching and lethal effects of cancer, upon local and upon constitutional conditions which well justify the word malignant.

In view of these well-known facts, are we to regard failure in the operative treatment of gastric cancer as inevitable? Are we, in a word, to give up in every case all thought of permanent cure, helplessly looking on, relieving pain with opiates and distress with lavage; resorting to surgery only as a palliative measure when the pylorus is completely obstructed?

Before adopting this policy of inaction, a glance at the work of the past twenty years may not be without suggestions as to the possibilities of the future. According to Gaussel,[4] in a compilation of 366 resections of the stomach and pylorus performed up to June, 1898, the immediate mortality from 1879 to 1885 was 73.68 per cent.; 1885 to 1890, 53.16 per cent.; 1890 to 1895, 37.66 per cent.; 1895 to 1899, 22.64 per cent.

Up to January, 1885, there had been 76 cases with 56 deaths before the tenth day. Nine patients lived at least a year; three two years; and one three years.

From 1885 to 1890 there were 79 operations with 42 deaths; 13 patients survived at least a year;

[2] Boston Medical and Surgical Journal, January 9, 1896.
[3] Philadelphia Medical Journal, July 7, 1899.
[4] Du Traitement Curatif du Cancer de l'Estomac, 1899.

one lived two years; one two years and eight months; one eight and a half years.

From 1890 to 1895 there were 154 operations; 58 patients died; 38 lived at least a year. Of these two lived seven years; one six years; one five years.

From 1895 to 1898 there were 53 operations with 12 deaths. Seven patients lived at least a year, and many still survive. Of the four patients upon whom gastrectomy was performed two lived nine months, and two are, as far as I know, still living. At last accounts Brigham's patient was very well.

These figures are appropriate in connection with the case herewith reported, because it seems clear that the chief question to-day is not as to the influence upon prognosis that the operation has so much as the influence that the disease itself has; not so much a question how much we may take from the stomach, but rather whether we shall take anything at all.

The chief objection to surgical treatment lies in the numerous and early recurrences after operation. That this is a strong objection must be admitted, but that it is a sufficient one must be denied. Unless it can be shown that the sum total of suffering is greater with operation than without it, that life is, on the whole, shortened rather than prolonged, operations must, in suitable cases, be advised.

I have already reviewed the condition of patients treated medically — a condition which is certainly deplorable. If while the patient lives he is more comfortable, a great gain has been made. If moreover, he lives a life filled with hope, instead of one wretched with despair, there is a striking gain, even if his immediate physical sufferings are greater. Finally, if in a considerable percentage of cases there is a restoration to health lasting several years, the balance is decidedly influenced in favor of the operative side.

The statistics of Gaussel are based upon a large variety of cases operated upon by many surgeons. Undoubtedly many cases have been operated upon which did not really justify the operation. If only those cases were subjected to operation which offered a reasonable hope of immediate and permanent cure, the outlook would, I am sure, be much improved. Furthermore, if the operations were performed by those only who were skilful and experienced, the outlook would be still brighter. As far as my observation goes, cases are operated upon which are unsuitable not only for radical operation, but even for a rapid and simple exploration. I have had sent me for radical operation case after case which plainly presented absolute hopelessness, cases in which there was not only a large, immovable, adherent tumor filling the epigastrium, but also a cachexia which forbade even a simple and rapid exploration. Exploratory operations under what seem the most favorable conditions, both local and general, show in a striking majority of cases that surgical intervention is hopeless. Yet the statistics of gastric surgery are based not only upon such cases apparently hopeless, but also upon the absolutely inoperable. As I have said before, I have myself observed cases in which operations were proposed, if they were not actually performed, in which, to my thinking, the most trivial operation would have been unjustifiable. It is as unfair to consider the results of operations in such cases as it is to include in statistics of recurrent cancer of the breast those in which at operation large masses of cancer are left. Such cases are of no value in forecasting the future, because their future is already fixed. We must base our arguments rather upon the cases which present possibilities of recovery — cases in which the patient's excellent general condition promises well for immediate success, and in which favorable local conditions justify the further hope of ultimate cure.

It seems important to consider at this point the chief element of success in operations upon cancer of the stomach.

As in so many other surgical diseases, acute and chronic, success depends upon the early application of the operative remedy. But for the delay which a correct diagnosis makes necessary, operations upon the cancerous stomach would present a far more encouraging outlook than they now do. Yet to wait for sure diagnosis is to wait for as sure failure. Are we not justified, therefore, in operating as soon as cancer is first suspected? If we are thus justified, how strong must the suspicion be? Upon what symptoms shall it be based?

The diagnosis of cancer of the stomach is said to be easy. It is, nevertheless, often difficult. The most skilful clinicians may overlook cancer of the stomach when it is present; they may believe it present when it is not. The earlier in the disease that the symptoms are studied, the more difficult is the diagnosis. It is impossible without exploration to know that there is trouble, and yet when it is strongly suspected the exploration may show nothing. The wider the surgeon's experience the more doubtful he becomes of the clinical diagnosis. Indeed, when the light of surgical exploration is about to be thrown upon a case, then the doubt appears the strongest. It is at this time that one feels most acutely the possibility of error and the responsibility of decision.

Pain in the stomach, with digestive disturbances, at a suitable age, always suggests cancer. The suggestion is strengthened by vomiting, emaciation, and cachexia. With or without bloody vomitus, it is made almost a certainty by the presence of a tumor. But the disease may have advanced far beyond possible operative relief long before a tumor has been discovered, even before the diagnosis is more than suspected. Changes in the gastric juice may not be detected even when the case is absolutely inoperable. On the other hand, patient after patient recovers his health after digestive disturbances and emaciation which, it seems, cannot but indicate cancer. What is to be done then to avoid the loss of precious time in view of the difficulties of diagnosis? On the one hand, by delay we may be losing the only favorable moment; on the other, by an exploration we may be subjecting the patient without cancer to the dangers of opening the abdomen. Both these courses are indeed mistakes, but the former is a grave, the latter a trivial, one. The unnecessary exploration may be even a great gain by substituting for the apprehension of suspected cancer the certainty that none exists. Not to have given the patient the chance of operation at the favorable moment may seem a trivial thing compared to the mistake of an unnecessary operation. True, the excitement in a community caused by an unnecessary and fatal operation is great; but the withholding from the patient perhaps his only chance, whether it be in cancer of the stomach or in appendicitis, excites little comment. Yet in the one case there is almost certain loss of life; in the other but an unnecessary exposure to trivial danger. Fear of unnecessary operation plays by no

means an insignificant part in the determination of the course to be pursued. This fear must be overcome if operations for cancer of the stomach are to be reasonably successful. The chance of mistake must be taken as one of the dangers of the surgical course of treatment, and it must be taken in the stage when cancer is first suspected.

The first indication for operation is a strong suspicion that malignant disease is present. Even then operation is inadvisable in marked cachexia (other than hemorrhagic) and in such diseases of other organs as will compromise success — diseases of the heart, lungs, kidneys. The local lesion in patients of excellent general condition may be conspicuously inoperable — out of all proportion to the functional disturbances. On the other hand, an excessive general manifestation — an extreme cachexia — may attend a local lesion of trivial extent. Local signs justifying resections are circumscribed tumors without contiguous or remote implications. Infiltrating masses not sharply defined, which approach contiguous viscera so that they must be closely shaved, do not justify radical measures. When complete extirpation of the disease requires complete extirpation of the stomach there is no local contraindication if the operation is technically possible. Palliative operations are impracticable when the disease is so widespread that there is no unaffected gastric surface for anastomosis with the jejunum. It is exceptional to find a stricture of the pylorus, however, in the widely infiltrating tumors. Operations are therefore demanded rather for radical cure than for palliation.

It seems clear that radical operations upon the stomach must necessarily be infrequent for reasons already stated. A case favorable enough to justify so serious a measure as partial resection cannot often present features that are favorable as to time, extent, complications and general constitutional excellence. If partial excisions are thus limited, complete extirpation must be still more infrequently justifiable. Taken altogether, patients with cancer of the stomach do not present an outlook favorable enough for operation once in fifty times. I have seen many cases of suspected cancer of the stomach. I have explored in at least twenty-five. In only one did I find a lesion justifying pylorectomy, and in only one gastrectomy. All the others were clearly so hopeless that nothing radical was attempted. In both the cases operated upon a movable tumor could be felt; in both resection was comparatively easy, and in both recovery from operation was rapid. In many of the cases explored tumors of great size were found, even when before operation none could be felt.

The indications for radical operation are thus seen to be narrow. They must be broadened by much earlier exploration based upon the earliest possible diagnosis. When performed at the earliest moment, upon patients whose general strength is but little impaired and in whom the disease itself is situated favorably for wide and thorough dissection, resection of the stomach, whether partial or complete, will present a very different outlook from what it does to-day.

ARMY NURSES HONORED. — The army female nurses have been invited to become members of the Association of Spanish War Veterans, a military society recently organized to perpetuate the memories which its name suggests.

THE BOSTON DISPENSARY CLINIC IN MENTAL DISEASES.[1]

BY ARTHUR C. JELLY, M.D., BOSTON.

SOME of you will perhaps remember a card received in December, 1897, which announced that a Department for Mental Diseases had been opened at the Boston Dispensary. The work has been under the direction of Dr. Walter Channing, whom I have assisted there and to whom I am indebted for the privilege of making this report. It was arranged that there should be clinics at the dispensary on two mornings a week, and that the assistant should see at their homes any patients whom the district physicians might wish to have examined there. It was to be expected from the character of the cases that the number in attendance upon any one clinic would be small. But since each case would require considerable time, it was evident that a large number was not so much to be desired as a variety. Moreover, the hope was entertained that careful attention to detail would lead the patient to visit the clinic sufficiently long to make the study thorough. On the whole, our experience has not been disappointing, for many patients have been under observation several months. On the other hand, certain promising cases disappeared after one visit. Examples of nearly all the common forms of mental disease have appeared.

An interesting group is made up of children and youth, showing defect either congenital or acquired very early in life. Many of these have come from Drs. Williams and Stowell, of the Children's Department, but the majority have been brought by officers of the Children's Aid Society. Such cases present a great variety. At one extreme are children so stupid that the outlook seems almost hopeless. Such is the following case, referred to us by Dr. J. N. Coolidge, of the West End Nursery:

J. L., four years old. Nothing remarkable in the history of either parent. Two of the mother's sisters died of phthisis, and one of them had chorea. Two of patient's sisters have died, the cause assigned in one case being "spinal meningitis" and in the other "cerebral congestion." The eldest child is an imbecile, who had epilepsy from the fourth to the tenth year. Three other children are said to be sound physically and mentally. Patient is the youngest child. When about two years old he was treated at the nursery for convulsions, apparently epileptic. He has now some ear trouble. He does not talk, can scarcely walk, shows lack of co-ordination in movements of hands. At the School for Feeble-Minded such children may often be taught much more than would appear possible to any one not familiar with the methods employed and the results obtained there. Under any less favorable conditions they usually fail to make any progress.

Rising in the scale from the imbecile of low grade, one finds cases of different degrees of intelligence up to that interesting class in which the defect seems to parents and teachers moral rather than mental. The management of such children is extremely difficult at times.

During the adolescent period, morbid fears and vicious habits of thought frequently cause great annoyance. If these continue, they lay the foundation for confirmed mental disturbance. If, on the other hand,

[1] Read before the Boston Society for Medical Improvement, March 13, 1899.

they are successfully treated, the result is very satisfactory. Such a case is the following:

A boy, sixteen years old, born of American parents. Mother enjoys good health and is not nervous; father scrofulous. A sister, younger, is well. Patient says he was always smart and bright until three years ago, when he had a "spell" come over him while working as an errand-boy during the summer. He left his work feeling very dull and stupid, went home and slept most of the time for forty-eight hours; had a doctor who said he was simply worn out. But he has had these dull spells off and on ever since. He gradually becomes listless, finds it hard to talk, stays in bed without any ambition; while sitting at a table reading, finds his head heavy and soon goes to sleep. Never has spasms, or bites his tongue or cheek; is never unconscious. Has sick spells now about once a month; each has lasted about a week. On one occasion only he had a strong impulse to run away and be alone. When doing errands he has been obliged to wait on the sidewalk some minutes before he could force himself to open the door and deliver the errand. When called upon to recite at school, his wits seem to leave him and he cannot answer at once, but he soon recovers himself. Frequently he lies awake for hours after going to bed, thinking over plans for the next day. Rides a bicycle, often fifty miles a day, much of it as fast as he can. Takes coffee at breakfast and tea at night. Appetite variable, digestion adequate, bowels constipated.

Physical examination. — Anemic and thin. Pupils equal, react; movements of eyes normal. Face decidedly infantile in type, forehead perfectly straight, palate long and narrow. Tongue flabby but extended well. Hands rather undeveloped and weak-looking; extended fairly well. Knee-joints not especially remarkable.

For the next two weeks he improved somewhat. Then he reported that he felt stupid and dazed and that he was afraid a dull spell was approaching. The next week he was greatly relieved because the spell had not amounted to much.

Through April his condition did not change materially, but during May and June there was steady improvement. In July he got employment at stencil-cutting and has since remained at this work. In October he came at our request to report. His father had cut his wrist and throat with suicidal intent, and nearly bled to death before he was removed to a hospital. A few days later his mother met with a bicycle accident and was confined to the hospital. His home was broken up, and he was boarding with an aged relative who did not provide for him very well. In spite of this trying experience, he kept at his work, and showed such a degree of self-control and such confidence in himself that we feel justified in believing that he has fully recovered.

That some insane people among the poor manage to get on outside of an asylum is well illustrated by a woman who has lived here and supported herself largely by her own labor since 1891, and who has been under observation at the clinic since February 3, 1898.

Mrs. J., widow fifty-six years old, born in New Hampshire of American parents. Family long-lived people without hereditary tendency to disease. She has two children alive. Climacteric eight years ago. Referred from Medical Department, to which she came for stomach trouble. She said that something moves inside of her; pieces come up into her mouth; they are found in the movements from her bowels. My suggestion that she might have a tape-worm she rejected with evident scorn, saying, "These are no tape-worms, but serpents; they clasp me round the waist, they hold my throat so that I cannot swallow, they get out into the cords of my neck, and into the flesh in other places and bite me there." Her belief is that these snakes are put into her mouth when she is asleep, and that they cause a terrible sinking feeling. Pills dissolve them. In this way she gets temporary relief, but something should be done to make the people stop putting them there. Something is done to other people in the house and they become ill, but do not understand the cause. The landlord and his wife do it or know who does. She went to the police about it, but they told her to see a doctor about it. So she came here for the protection of the city.

She described a typical attack as follows: The pain or queer feeling starts in the muscles of the legs, which swell or knot up; then there is a beating in the back or bowels, and soon there is the snake in her throat, where it remains till she takes a pill and kills it.

Briefly reviewed, this woman at twenty-five years of age gave birth to her first child and had an attack of "puerperal delirium and was flighty afterward." At thirty-five, after the second child was born, she showed hallucinations and delusions, was excited and dangerous and required the seclusion of a hospital. In 1887 she became a quiet working patient and in 1891 was discharged much improved.

It seems safe to allow her to remain in the community, because she no longer plans taking vengeance upon the conspirators, but changes her residence or asks the police for protection, or comes to us for medicine to correct bad effects. By the use of mild laxatives constantly, and of sedatives occasionally, and by regulation of the diet we have done something for her. But probably the most powerful therapeutic agent has been our firm adherence to the statement that we believe she will be protected from harm.

Among our earliest patients were some whose mental disturbance was not so advanced as to warrant making out a certificate of insanity and sending them to a hospital for insane, and yet was of such a character as to make probable an attack of serious nature unless it should be speedily checked. Three such cases follow:

December 22, 1898. J. T., forty-eight years old, widow, born in Vermont. Father died of consumption. Mother very nervous but not sickly. Patient never had any serious sickness. Recovered well from fracture of thigh some years ago. Had large ovarian cyst removed eight years ago. Recently contracted malaria in the South, but considers herself free from it now. Been very nervous all her life. Been living in Boston two months and been alone most of the time. Has become discouraged. Is afraid to leave a knife or scissors about because of suicidal impulses. When one of her relatives visits her she is in constant dread lest she may assault him with the cane he brings, though very fond of him. Weeps frequently. Has little money and has sought employment without encouragement.

January 9th. The patient eating better. In other respects is about the same or worse. Very lonely and

melancholy. Should she be allowed to live alone in lodgings?

January 19, 1899. A. B., sent by Dr. J. M. Jackson, of Massachusetts General Hospital, single woman, twenty-five years old, formerly worked in a shoe factory, of late helped mother at home. Both parents and other children jolly and happy. Patient herself formerly always cheerful. She never had any serious illness. A year ago she suffered for some time from nervous dyspepsia and was despondent for a few days. For a long time she has had headaches, which have been severe of late. For about a week she has been very despondent and thoughts of suicide keep running through her head and she does not dare to read the papers any more. Such thoughts are present when she wakes in the morning and she does not dare to remain alone in her bedroom. She has eaten sparingly of late and slept poorly. She was asked to return in a week, but a month has elapsed since the first visit and we have not heard from her. Was it right to let her try to get along at home?

(To be continued.)

ADMINISTRATION OF ETHER AT THE BOSTON CITY HOSPITAL.[1]

BY J. B. BLAKE, M.D., BOSTON.

THERE is little doubt that proportionately more ether is used in Boston than in any other city in the world. A keen interest in ether administration always exists in this vicinity, and has for various reasons increased rather than declined during the past two years. This is probably true the world over, and is, in part at least, due to the work of Schleich in both local and general anesthetics, the recent statistics of Gurlt in Germany, and of the St. Bartholomew Hospital in London. It was thought, therefore, that a brief statement of the routine of etherization at one of the large hospitals of Boston might be of some interest to this Society.

At the City Hospital three things have combined to increase greatly the attention paid to the administration of ether as well as the personal interest taken in it by the house officers. These things are: (1) The establishment of the Burrell Ether Prize; (2) the visit of Dr. Bennett, a professional anesthetizer from New York; (3) the introduction of the ether chart.

The Burrell Ether Prize was established about one and one-half years ago. The interest upon a sum of money presented for this purpose is awarded by the superintendent and senior surgeon semiannually to the house officer who is considered by the Committee on the Ether Prize to be the best etherizer among the eligible candidates. The prize committee consists of three members of the surgical staff, who personally watch the administration of ether by all candidates as frequently as possible, and who take testimony from other members of the staff also. The names of the prize committee are not announced, since it was thought that in this way they might obtain a fairer estimate of the ability of the candidates. It does not improve the work of an average house officer to know that a prize committee man is watching his every motion. Up to the present time six house officers have been eligible for the prize during each six months. These men are the three junior house officers and the three surgical dressers. There have been two awards thus far, and in each case the prize has been awarded to men who have given ether for twelve instead of six months. The decision of the committee has been made with much care, and is a task more difficult than might at first appear. The money value of the prize is of course but one of its attractions. In awarding the prize the committee consider safety, comfort, time and the amount of ether used.

Dr. Bennett, of New York, impressed all who saw him by the rapidity and the ease with which anesthesia was produced. He used the gas-ether apparatus, and demonstrated two cases at the City Hospital — patients who were about to be operated on when he arrived. One was an alcoholic case for perineal section, the other an old man for some minor operation. The production of anesthesia was so easy, so rapid, and apparently so pleasant to the patient that it could not fail to excite the admiration which it deserved.

The ether chart is modified from the one in use at Johns Hopkins Hospital. Its present form is at least partly experimental, and it will probably be further modified as time goes on, and in the directions which practical experience shall suggest. Its merits are many, its disadvantages few. The latter may be said to be exhausted in the expression not infrequently heard when it first appeared — that it increased the work of the etherizer. It certainly does increase the number and the accuracy of the observations which he must make upon the patient under his charge, and in this way it shows one of its very important advantages, which is that it helps greatly to concentrate the attention of the etherizer upon his task, and to prevent him from watching the operation or the surroundings. If it can teach the etherizer that his patient demands every bit of care and attention that he can bestow, the chart will have more than justified its introduction by its very first step.

Other advantages of the chart are the opportunity which it offers for a more careful study of cases, and particularly for the more accurate record of complications or emergencies, and their treatment; and, finally, it is of assistance to the operator, who by a single glance may get the general trend of pulse and respiration, in the same way that he gets the temperature record in the wards, and sees a series of consecutive observations instead of a single record. In a serious or long-continued operation this may be a very positive value.

The pulse is recorded every five minutes. At the bottom of the chart is a space for the record of respiration; at present this is made in figures and is also taken every five minutes, which seems unnecessary. A better arrangement would be to carry the lines of the chart lower, which would permit a point record of respiration, which would be similar to the pulse curve, and a ten or even fifteen minute observation of the breathing would probably be sufficient.

Until within six months Squibb's ether has been exclusively used at the Boston City Hospital. Recently Melincraft's ether has been tried, and has given fair satisfaction; Squibb's is still preferred by most of the house officers.

A tin cone with a rubber mouth-piece is used through-

[1] Read before the Boston Society for Medical Improvement, March 13, 1899.

out the hospital, gauze or cotton waste being placed inside and saturated with ether. Since the substitution of the tin cone for the old cuff cone the amount of ether used has decreased, though the number of operations has remained the same or increased. With it the production of anesthesia and its continuation seem to be at least as easy as with the older forms.

The writer and others have on several occasions used the following apparatus with fairly satisfactory results. In cases involving operations upon the mouth, lips or face, the patient is etherized by the usual cone; a rubber catheter is then introduced into one nostril and is connected with an oxygen cylinder; in the wash bottle to which the gas is led after leaving the cylinder and before being inhaled by the patient, ether is substituted for water. The oxygen bubbles up through the ether and carries with it a sufficient quantity of ether vapor to keep the patient anesthetized, as a rule. The difficulty which sometimes arises is due to the fact that the patient is breathing air through the mouth all the time, and a rather rapid stream of gas must be forced through the ether to counteract this. No unpleasant results have followed.

The use of oxygen after ether has been given a trial at the hospital, and is now restricted to those special cases in which the color and respiration tend to remain poor after the operation is finished.

The use of nitrous oxide to produce anesthesia, which is to be continued by ether or the substitution of chloroform duting ether anesthesia, or *vice versa*, is rarely employed at the Boston City Hospital, except at demonstrations to students.

Ether is given by the surgical junior house officer or by the surgical dresser. The junior is a regular house officer, having been previously an externe, and going on in succession to be senior house officer and house surgeon. He must therefore have finished, at least, three years of medical study, and have had six months' experience in out-patient work.

The surgical dresser holds an appointment for six months only. His duties are to make such simple ward dressings as may be assigned him by the house surgeon; the examination of urine under the supervision of Dr. Ogden, and the administration of ether at times when the junior is busy, or at the request of the visiting surgeon. Any medical student who has completed two years of study is eligible for this position. Any surgical dresser may at the end of six months make application for another term of service. It is thus to be seen that the administration of ether is entrusted, as in most other hospitals, to the youngest of the house staff.

The members of the surgical staff have always endeavored to give a certain amount of instruction in etherization to the house.

This instruction was formerly entrusted to two members of the surgical staff specially appointed for that purpose, who gave alternately two informal lectures to each new-coming set of juniors and surgical dressers, and then personally supervised each in one or more etherizations. At present this has been superceded by an arrangement by which each of the three surgical services appoints one of its own assistant surgeons to be responsible for the etherization and to instruct the etherizers in any way he thinks proper. It will probably be admitted that in etherization, even more than in most surgical procedures, actual demonstration and personal experience is of the first importance, and the difference between a surgical dresser who has given ether for six months and one who is about to give it for almost the first time is too obvious to need comment.

The etherizer is made to understand as foundation principles that the safety and comfort of the patient are of much more importance than the time required to put the patient under ether, or the amount of ether used. After having mastered the rudiments, it is of course desirable to reduce the time of producing anesthesia as low as is possible with comfort to the patient. Some of the house officers have had results in a series of cases which were surprising to the writer at least. One dresser etherized seventeen consecutive cases taken just as they came to operation in an average of about four minutes. Seventy-five charts taken at random from those made during January and February show about eight minutes as the time required to produce full anesthesia. This, of course, is actual elapsed time, not including transfer of patients.

The charts which are being circulated for inspection are the rough drafts, just as they appear at the close of the operation. They show various types of cases, and certain things which might not be expected. For instance, the initial rise of pulse rate with the beginning of anesthesia is not always present, even allowing for the fact that it is more difficult to make an accurate pulse curve during the production of etherization than at any other time. Several of the charts show that operations may at times be prolonged for two hours or more, with a pulse curve that is either approximately stationary, or even falling a little all the time. They show, also, that in certain long operations, such as herniæ or dissections of the axilla, the pulse may remain for a long time at precisely the same rate, instead of jumping up and down, as might have been expected. On the other hand, one or two of the charts show that it was best to end the operation with all possible speed.

There is no general rule in regard to administration of drugs before anesthesia. For a certain length of time $\frac{1}{60}$ of a grain of atropia was given by mouth fifteen minutes before the ether. The writer is personally satisfied that if atropia in the dose of either $\frac{1}{30}$ or $\frac{1}{100}$ of a grain were given to every case, unless for some special reason it were contraindicated, the result would be decidedly beneficial, both in diminishing vomiting, reducing the amount of secretion in the mouth and large air passages, and in direct stimulation to the respiration.

On three occasions slight fires due to the inflammability of ether have occurred. No damage has resulted, and the small blaze has been immediately extinguished. The reason that these occurrences are reported is to emphasize their origin, which has come with the introduction of the aseptic technique. In each operation room there is a small copper boiler in which the instruments are sterilized; this is heated by a gas flame, and is usually situated near the wash basin. In using ether after the preliminary scrubbing of the hands, a current of air apparently drove the ether vapor towards the sterilizer, and the fire resulted. Up to the time of the occurrence the possibility of such a thing was entirely overlooked.

Dr. Bennett's visit certainly suggested the question of the advisability of modifying the present system of giving ether in Boston hospitals.

Professional anesthetizers are common enough in London and in a few cities in the United States. They

are the result of the modern movement towards specialization, and are certainly more rational and desirable products of that movement than certain other types which it has developed. In certain cases, and in private practice, the professional anesthetizer is a most desirable and delightful luxury, possibly at times almost a necessity. But it does not seem that the large general hospital have reached a point where it is desirable to substitute for the etherizer who is a house officer one who is an expert. There are other reasons besides that of expense. In any large hospital three anesthetizers would be required for part of the day at least, and one resident. From ten to fifteen operations are frequently performed in a day, and often three or four are being carried on simultaneously. The house officers would lose a very valuable part of their experience, and it is to be feared that the general public would suffer. The somewhat complicated gas and ether apparatus used by most professional anesthetizers could undoubtedly be mastered by the house officers, but much more slowly than is the case with the simple cone, and at times it certainly does not seem advisable to increase the difficulties with which the beginning etherizer so courageously but inefficiently struggles.

Is the present routine of ether administration at the City Hospital entirely satisfactory? It certainly cannot be said to be without faults, but they are faults which can be, and are being, modified. It is to be doubted if a perfect system of anesthetization can ever be carried into frictionless working order in a large American hospital. The emergencies and the rush of operative work are at times too great. But the writer is satisfied of two things: (1) That ether is given, on the average, better in and about Boston than in any other place in the world (with the possible exception of London); (2) that the average of etherization at the Boston City Hospital is decidedly better than it was ten years ago, and that the introduction of the ether chart is certainly sure to improve it, and, finally, that complications, catastrophes and disagreeable after-effects of anesthesia are, as rather careful observations show, less frequent than might reasonably be expected, if the statements of text-books can be taken as a fair standard. Only one case of pneumonia after ether has been discovered, and the proportion of vomiting in 250 cases was lower than the latest figures from the St. Bartholomew Hospital, of London.

CYCLICAL, OR PERIODICAL, VOMITING.

BY ALBERT H. BLODGETT, M.D., BOSTON.

CASES of well-marked cyclical, or periodical, vomiting are so rarely observed, or at least so seldom reported, and are the subject of so little attention in the text-books of medical practice, that the following typical case is presented as a contribution to an infrequent and very obscure pathological condition, which appeared under circumstances particularly favorable for careful study, and in which the phenomena attending it could be fully noted and are believed to be correctly reported. The patient was under the care of a particularly competent nurse, and the facts related may be considered reliable.

The patient is a boy, at that time of thirteen years. He was from sea-going ancestry in both parental lines, and is descended from the old Puritan stock of Southeastern Massachusetts. From his father he is thought to have derived certain stigmata of neurotic character, as this parent at times showed signs of unsoundness of character, and was also subjected to unusual hardships at sea, both before and after the birth of this son, which are believed by the family to have been possible causative factors in the mental and moral variations in the child. I might add that the only other child is a daughter, somewhat older than the patient, in whom no particular nervous or other special tendencies are noticeable.

The patient has always been considered remarkably well except in regard to the conditions hereafter noted. He is a large, sturdy youth, looking older than his years, and is precocious in mental and physical development. He has been indulged by his family to an injudicious degree, and is capricious and "freaky" in temper. Appetite is usually very good, at times ravenous, and he often eats heartily between the hours of regular meals. Digestion and sleep normal, bowels active; there are no signs of intestinal worms or other irritation of the alimentary canal. Urine normal. No indications of genital irritation. Pulse and temperature normal.

I was called to this patient on account of recurrent periodical attacks of vomiting of protracted and stubborn character, occurring at fairly regular intervals of about four weeks, and lasting from two days to a week on each occasion. The paroxysms were usually preceded by a prodromal period of three to four days, during which the patient would become gradually languid, pale and spiritless, with progressive loss of appetite, increasing weakness, more or less pronounced constipation and moderate elevation of temperature; so that on several occasions it was suspected that the condition was that of commencing typhoid fever. On each occasion, however, after a period of nausea and headache, there supervened vomiting of paroxysmal character, in which enormous amounts of fluid stomach contents were thrown up, mixed with portions of food which had been ingested many hours, or sometimes even days before. In the vomitus were often found substances of most varying nature, such as pledgets of lint, wool, pieces of string, feathers, and other strange objects, which had been swallowed by the patient, generally at times shortly preceding the attack. A tendency to ingest strange and indigestible substances was noticeable at other times, independently of the periodic occurrence of vomiting.

During the first paroxysm, while the patient was under my observation, little could be done in the way of treatment on account of persistent nausea, and frequent retching, but when this had subsided, an efficient laxative was administered, which had the effect of relieving the bowel of much fecal accumulation, mixed with a considerable amount of foreign substances similar to those vomited. Upon subsidence of the acute symptoms, and the action of the laxative, recovery was rapid, and in a few days the patient was as well as ever. After an interval of about four weeks a similar train of symptoms was again developed, and the same process took place, with a similar result.

For some time after the second observed attack the patient was carefully watched during the interval between the paroxysms, and it was noticed that for about two weeks everything would go on in a normal manner, but at the end of that time he would begin to exhibit signs of restlessness, with capricious appetite, an

uncontrollable inclination to swallow most extraordinary substances, such as woolen rags, portions of book-covers, paper, sticks, straw, sand, and other like indigestible substances. He has even been known to swallow portions of candles and boot-blacking. It cannot be thought strange that, in association with such morbid physical cravings, there should be also marked deviations in moral sense, and at such times there was always noticed in the patient an increased irritability of temper, with a tendency towards misstatement of facts, which under ordinary circumstances would be considered simply lying; with disorders of sleep and morbid inclinations in respect to morality, approaching to some extent the indications of perversion or inversion of ordinary mental and moral instincts.

These phenomena were soon recognized as indications of an approach of the symptoms culminating in cyclical, or periodical, vomiting, which in all observed attacks soon and invariably followed.

After one or two periods of such character, an attempt was made to obviate the attacks by means of treatment before the period of crisis should be reached. This was undertaken with the idea that by forestalling the attack by means adapted to relieve the stomach, the actual crisis might be averted. To this end, as soon as the symptoms of an approaching paroxysm were noticed, the patient was put to bed, the diet was restricted, and some emetic, generally ipecacuanha, was administered, followed by a gentle laxative. This had the effect of emptying the stomach and bowel of large amounts of the character before mentioned, with immediate relief to the patient, and the rapid subsidence of all the symptoms. The moral temperament and the physical condition of the patient were at once restored to normal, and the patient on each occasion escaped any further indications of periodic vomiting. The immediate relief was so highly appreciated by the sufferer that he not only made no objection to the emetic, but would of his own accord apply for the remedy before it would otherwise have been given. After some months of this preventive treatment, associated with tonics and hygienic measures, the tendency to periodic returns of vomiting was diminished, and it at length entirely disappeared, and thus far has not recurred. The time elapsed since the last symptoms of an attack, now many months, would seem to indicate that the morbid tendency is entirely overcome. The tastes and disposition of the patient have also undergone a marked and satisfactory change. He no more indulges his morbid appetite, has sought and obtained a business position in which he takes great interest, and which he conducts successfully. His general condition has also improved, his habits are steady, sleep is uniformly good, and all the functions of the body are carried on normally. The case may therefore be considered cured.

Periodic, or cyclical, vomiting, so far as it has been described, is usually associated with other symptoms or indications of an hysterical or neurotic temperament, or with exaggerated nervous susceptibility on the part of the affected patient. Most of the few cases noted have been in women, in whom also the stigmata of the neurotic element were otherwise distinctly present. In some it was plainly connected with disorders of the generative apparatus; in some no such relationship could be established. In a few cases periodic vomiting has appeared as the first noticeable symptom of organic lesion of the central nervous system, particularly of tabes. In the patient who forms the basis of this communication none of these relationships could be made out, but there was evidently an intimate connection between the gradual development of the symptoms and the temporary deviation of the mental and moral processes which always preceded and accompanied the attacks. There were none of the ordinary indications of hysteria, though the sex of the patient would not necessarily rule out this condition. The lad was not of an emotional temperament, but rather the opposite. Circumstances of time and season had no apparent relation to the occurrence of the attacks. Diet could not be accused. The hygienic and other habits of the patient were not different from those usual to boys of his age. No overstudy, no mental shock or known nervous insult had occurred to determine the neurosis, and there had been no prolonged or exhausting illness to provoke it. It would seem clear that the periodic recurrence of vomiting in this case was due either to the cumulative effect of some obscure influence of central nervous origin, acting in reflex paths; to the reaction of some retained toxin, or other offending substance, or to some disorder of the secretory function, or the eliminatory capacity of the excretory apparatus. From any of these causes a perversion of the natural gastric desires and processes might be gradually induced, to be followed by a periodical nervous discharge in the way of vomiting, with relief to all the symptoms until the next exacerbation should repeat the occurrence. No symptoms of nervous impairment or mental degradation, except the temporary moral obliquity alluded to above, could be detected in this patient.

The line of treatment here outlined may perhaps be called empirical, but it had the effect of interrupting the series of periodical attacks, with ultimate entire cessation of the morbid tendency. I cannot but believe that this case would have offered a most favorable occasion for the exhibition of hypnotic suggestion, though this method of treatment was not tried.

In the *Practitioner*, February 28, 1899, page 198, is the review of a case of cyclical vomiting reported by Whitney.[1] The patient was a neurotic, sensitive, high-strung boy, eight and one-half years old, with hereditary neurotic taint on the father's side. He had attacks of vomiting without known cause, recurring periodically at intervals of three months. There was a prodromal period of eighteen to twenty-four hours, when vomiting would occur, and continue for eighteen to thirty-six hours, to be followed by rapid recovery without active treatment.

Leyden first described this condition under the name of "periodic vomiting." Snow has also mentioned cases. Clinically the vomiting is sudden in onset, severe in character, and consists first of the contents of the stomach, followed by acid mucus. Regurgitation of intestinal contents or fecal vomiting has not been recorded. There is usually febrile action in children, though this may be wanting in adults. The abdomen is generally retracted. Prostration is out of proportion to the local manifestations, and may become threatening. There may be somnolence, delirium or excessive restlessness, sometimes with jactitation. The gastric crises may recur at intervals of six weeks to six months, and are not obviated by careful attention to diet or hygiene.

[1] Arch. of Pediatrics, November, 1898, page 837.

Periodic vomiting has been thought to be a gastric neurosis, possibly related to migraine. It seems often not to be due to reflex effects from the central nervous system, but may possibly be due to the action of ptomaines or other toxic bodies retained in the system, especially in susceptible nervous patients. The disease may be allied to lithemia, as certain poisonous alloxuric bodies, such as paraxanthin and heteroxanthin, have been found in the urine of patients with migraine and periodic vomiting. A number of the observed cases have been in children. The treatment recommended has consisted in avoiding overstudy, with plenty of fresh air and exercise, and, particularly, attention to sleep. The diet should be simple, with fish to the exclusion of meats, and should contain large quantities of fluid, such as milk, lithia water, etc. Salol and the salicylates have been recommended, possibly as internal antiseptics, and the bowels should be kept free, laxatives being used if required.

Osler, in his recent text-book, alludes to periodical vomiting by name only.

In the "American System of Practical Medicine" the only allusion to this affection is the following: "Sometimes the disturbance is paroxysmal, and everything that is swallowed is quickly rejected for a number of days."

Boas [1] states that periodical vomiting occurs, as far as can be judged from the cases thus far reported, either in connection with a functional neurosis, such as hysteria, neurasthenia, hemicrania, etc., or in relation to reflex conditions dependent upon central lesions, such as tabes dorsalis, or as the result of affections of the sympathetic nervous system. Probably the affection described by Rossbach under the name of "gastroxynsis" is also allied to this condition, and due to some similar cause, though his description would seem to indicate a form of hemicrania with preponderance of gastric symptoms.

Boas further discusses the phenomena of periodic vomiting in treating of gastric neuroses, in which he mentions "juvenile vomiting," following overexertion in study, etc., but this condition would seem to present little in common with cases of true periodical vomiting. Charcot has called attention to "crises gastriques," in connection with tabes, of which he considers it to be at times the first noticeable symptom; and he therefore advises in every case of periodical vomiting to carefully observe the reaction of the pupils, the tendon reflexes and the acuity of sensation.

Periodical vomiting occurs most frequently in persons otherwise perfectly well. It generally recurs at fairly definite, and sometimes regular intervals, varying from one week to six months, and the individual attacks present a close resemblance to the "crises gastriques" of Charcot. The attack, as first described by Leyden, commences with indistinct prodromal symptoms, such as headache, languor, weakness, etc., or it appears suddenly without premonition, while the patient is in ordinary health, thus resembling explosive or cerebral vomiting. There may be preceding or accompanying pain in the epigastric or abdominal regions extending to the loins or back; or the first symptom may be a sudden and irresistible attack of vomiting, in which the stomach contents are forcibly rejected, often to a surprising amount, to be succeeded by further efforts of vomiting, in which gastric mucus, and, finally, duodenal fluids mixed with gall appear. It is somewhat interesting to note that the vomiting is usually confined to the hours of waking, and seldom interferes with sleep, the nights being usually calm and restful.

The duration of single attacks varies from one day to fourteen days. Recovery is usually rapid on subsidence of the vomiting, and the patient takes food with much relish, soon regaining his former strength and appearance, and quickly making good any loss of flesh which may have occurred during the attack. The other functions of the body seem to have undergone no deterioration from the gastric disturbance.

The causation may be an idiopathic neurosis of the stomach, or reflex effects from disturbances of other organs. Floating or dislocated kidney has been thought to produce periodical attacks of vomiting, but the exact relation of the two conditions has not been clearly defined. Hydronephrosis, from pressure, and possibly from uremic intoxication due to cumulative effects from sudden temporary renal insufficiency, has also been thought causative of this affection. Nicotine poisoning has been observed to cause recurrent vomiting, as has also the invasion of the intestine by certain parasites. In women, local conditions of the uterus and ovaries have at times a similar effect in periodical reflex gastric crises. When no sufficient cause can be ascertained, it is wise to bear in mind the occasional connection of this symptom with the early history of tabes, as it sometimes presents the first noticeable manifestation of a serious organic lesion of the spinal cord.

[1] Diagnostik und Therapie der Magenkrankheiten, II Auflage, p. 131.

Clinical Department.

DERMOID CYST OF THE OVARY WITH TWISTED PEDICLE IN A CHILD OF TEN YEARS; OPERATION WITH RECOVERY.

BY J. V. MEIGS, M.D., LOWELL, MASS.,
Surgeon to St. John's Hospital.

My only apology for reporting the following case is its rarity, coupled with the fact that we are always being confronted with cases where the history usually elicited is apt to throw us off the track and make us blunder in diagnosis.

It would seem as if it were easy to make a differential diagnosis between hydronephrosis and a dermoid cyst of the ovary, yet in the case following the difficulty can be seen, especially so if the previous history of the case is taken into consideration, together with the mother's statement.

T. M., female, age ten years, born in Lowell, always, as far as parents know, healthy, excepting now and then a urinary difficulty, painful micturition, incontinence, and sometimes retention, the difficulty existing over a period of several months, and attributed by parents to "worms." On June 17, 1899, at about noon, while at play, child fell from a swing to the ground, striking on its buttocks. Immediately there supervened intense pain in the abdomen, which increased as time went on. Upon undressing child, her mother noticed a swelling in the abdomen, which she had never seen before, and immediately sent for her physician, Dr. Halpin. The doctor recommended that she be sent to St. John's Hospital, where she was received by the house physician, who, upon examination, concluded that the tumor was a distended bladder.

He immediately catheterized the patient, getting about one ounce of urine. I saw the case at six P. M. same day, and also thought I had a distended bladder to deal with, and the catheter brought forth about the same quantity of urine; thereupon, I questioned the mother, with the result of getting the history as before related, and the statement that there had never been any tumor present in the child's abdomen previous to the fall, and that it must be a result of it. The abdomen by this time was very tender and somewhat tympanitic, so much so as to preclude any examination being made without an anesthetic. Child was also beginning to show evidences of shock. Permission was readily granted for anesthesia, and for any operation thought necessary.

I believed I had to deal with a hydronephrosis, caused probably by a kink or twist of the ureter, as a result of the fall. When anesthetized, and upon examination, I found the tumor somewhat solid, occupying a position to the right and below the umbilicus, as large as a cocoanut and quite movable. Here was more trouble. Was it a hydronephrosis or an ovarian cyst? To answer the question, after usual preparations were made I opened the abdomen in the median line, and found a dermoid cyst of the right ovary with a twist of the pedicle once and one-half. Cyst was dark in color, showing that its circulation had been at least impaired. It was untwisted, ligated and cut off. Other ovary was found to be healthy. Abdomen was closed, patient was returned to ward, where recovery was uneventful. She was discharged July 15, 1899, well. The tumor contained sebaceous matter, cartilage and bone.

I give the record of this case at some length for the reason that I have never seen such a one reported, and it was to me a curious case. Taking into consideration the history of the urinary disturbance, the record of the fall and the sudden development of the tumor, was it not easy to be mistaken in the diagnosis?

Medical Progress.

REPORT ON PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

SO-CALLED SEBORRHEIC ECZEMA.

Audry,[1] of Toulouse, who has written before on this subject, deplores the use of the name seborrheic eczema, especially from the teacher's standpoint, as it implies the inclusion of a more extended variety of cases than properly belongs in this class.

In a short *résumé* of the history he points out that numerous authors had described perfectly the lesions grouped together by Unna under the term seborrheic eczema, some of them being considered eczemas, others seborrheas. Unna, as is well known, has included in his class many forms of moist eczema, as well as all forms of seborrhea except seborrhea oleosa and certain cases of psoriasis. Audry believes, in opposition to Unna, that the class of seborrheic eczemas should be restricted rather than enlarged, and that at present we are forced to rely chiefly on clinical observation, since pathological anatomy and bacteriology have furnished us no positive foothold.

It has been shown that the increase in the amount of sebum has not the fundamental importance in this affection that Unna attributed to it, as the sebum is often entirely wanting. It has also not been proved that the horny layer in seborrheic eczema is permeated with fat at all times. Audry has seen a seborrheic eczema develop on a cicatricial area where no species of gland could possibly exist.

In 1892 Neisser opposed the inclusion of seborrheic eczema among the eczemas, and offered the name seborrheic mycosis. This view was also held by Schwimmer, Leloir and Breda. Audry has suggested that the affection be called Unna's dermatosis, without, however, meeting with much support. The view that the affection is of a parasitic nature is gaining ground. Audry's view is that it is not an eczema, although there are in many instances many of the features of an eczema, and that seborrhea is not a necessary feature of the disease. It is an epidermal affection, probably parasitic in origin, inoculable and contagious, although the active agent has not as yet been determined.

Audry divides the cases of seborrheic eczema into three varieties: (1) The pure and regular forms; (2) the abnormal forms, and (3) the complicated cases. Among the abnormal forms he includes cases in which the course is acute, and the form erythemato-vesicular, a rare lichenoid form, and the psoriasiform variety. With regard to the latter there is much difference of opinion. Many believe with Unna that there are numerous cases falsely included under psoriasis which should be classed with seborrheic eczema, while others, although admitting the similarity of certain cases, think that there are not sufficient reasons for separating them from psoriasis. In these doubtful cases a point of distinction from the usual varieties, according to Audry, is the locality, a seborrheic eczema affecting the scalp, eyebrows, elbows and knees. It is often accompanied by white, glistening, fatty scales. Papular elevations are rarely prominent, the affection usually appearing as scattered plaques, more or less covered with thick, yellowish crusts. In rare instances large surfaces of the skin may be affected, and the erythrodermic form produced.

In enumerating the varieties according to the region affected, it is noted that the scalp is regarded as the point of origin of this affection. The ears are prominently affected, especially the external auditory canal. The eyebrows and lids, the nasolabial furrow and the lips, are also points of predilection. Upon the trunk the presternal and interscapular regions are frequently affected. The abdomen and extremities are the chief seat of the papular and psoriasiform varieties. The genitals are a frequent seat.

With regard to the bacteriology of the disease, caution is urged in admitting the micrococci to be the cause of the "eczematisation." Even if this were so we should not be much farther advanced in knowledge, as the eczema can only be considered as a complication. The various parasites described by Unna, Sabouraud and others as causative of seborrhea have not been confirmed by other observers and their connection with seborrheic eczema rests on a very poor foundation.

Audry regards sulphur as the most valuable therapeutic agent in this disease, which he ordinarily prescribes in the form of an ointment or paste, with sometimes the addition of salicylic acid or resorcin. In the dry, psoriasiform variety more stimulating applications

[1] Annales de Derm. et de Syph., 1899, March, April.

may be employed. He considers sulphur baths to possess a remarkable and almost constantly beneficial action, and in this regard seborrheic eczema shows a marked distinction from other varieties, where baths in any form are distinctly injurious.

UNIVERSAL LICHEN PLANUS FOLLOWED BY SUDDEN DEATH.

Fordyce [2] has reported an interesting case of lichen planus to the American Dermatological Association. It concerned a woman of sixty, and had been present over a year when seen. The affection had become universal and the patient had lost almost all of her hair. She had previously been insane and a hard drinker. When seen the eruption involved face, scalp, trunk and extremities, but did not affect the palms and soles. It was made up of groups of papules, circinate and gyrate in form, pigmented in the centre and with a surrounding pigmentation. There were also large, dark-red, shiny, umbilicated papules with angular outlines, and scaling, superficial lesions, resembling psoriasis. The circinate character of the lesions was very pronounced. There was intense itching, so that sleep and nutrition were interfered with. There was some improvement under arsenic, but acute exacerbations occurred, with a high temperature, rapid pulse and malaise. Finally, under increasing doses of arsenic, the eruption almost entirely disappeared, leaving intense pigmentation. A few days later she died suddenly on attempting to leave her bed. At the autopsy there was found an acute dilatation of the heart, with brown atrophy of the muscle. Also chronic diffuse nephritis, with arterio-sclerosis and infarctions.

The writer remarks that we are too ignorant of the etiology of lichen planus to say how the vascular and kidney changes are related to the cutaneous eruption. He regards it as probable from the manner in which the eruption extended, that the latter depended on changes in the cutaneous blood-vessels. An acute outbreak of the eruption was preceded by constitutional symptoms suggesting the presence of some poison in the general circulation. The only affections that could be considered in differential diagnosis were syphilis and psoriasis, but both could be easily eliminated. From a microscopical examination of several small papules excised from the back, the changes were found to be fairly typical of those usually met with in this process. The papillary layer of the corium was densely packed with small cells which stained deeply and were mostly mononuclear leucocytes. The chief characteristic of this cell infiltration was its sharp limitation to the vessels of the papillary layer. The cells were so closely packed that in some instances it was difficult to trace the boundary between them and the epidermis. Under high power there were found cells with larger, elongated, and brilliantly stained nuclei, which were probably young connective-tissue cells, as well as connective-tissue cells containing pigment, and also free pigment. The epidermis was invaded by leucocytes and there was a degeneration of the lower rete cells. The slight atrophy which the papule undergoes on involution is regarded by Fordyce as due to the degeneration just mentioned. He thinks the bluish-red color due to an extravasation of red globules and to the coloring matter that comes from their disintegration rather than to the opaque character of the thick layer of cells, as Unna believes.

[2] Journal Cut. and Gen. Urin. Dis., February, 1899.

ERYTHROMELALGIA.

Mitchell and Spiller [3] report a case of this affection in which important findings resulted from a microscopical examination of the arteries and nerves. It was that of a man of sixty-one, who began two years previously to have attacks of savage pain and tenderness in the right foot, with an intense erythema when the foot was dependent or was used. These phenomena occurred on various parts of the foot, and often lasted for months in the same locality. At one time an ulcer appeared on the outside of the fourth toe, which healed slowly. The erythematous areas were extremely sensitive to pressure. When seen the affection had been for some time confined to the great toe.

Dr. Mitchell had previously cured the affection in a young man by stretching the posterior tibial nerve and cutting the musculocutaneous and external saphenous nerves, but in a second case it had resulted in gangrene. In the case in question it was resolved to amputate the toe and half of the metatarsal bone. It was found microscopically that the nerves were greatly degenerated, the nerve bundles being composed almost entirely of connective tissue, with disappearance of the fibres. There were no less striking changes in the blood-vessels. The media of the arteries was thickened, and the intima intensely proliferated, so that the lumen was obliterated in some instances. The authors are unable to say whether the arterio-sclerosis or the neuritis was the primary lesion. It is very probable that such diseases of the vessels may cause a degeneration of the nerve fibres. It is also to be remembered that the arterio-sclerosis may have been due to the advanced age of the patient, yet the writers regard the symptoms as due to the peripheral neuritis. The preservation of sensation in the face of such nerve degeneration is remarkable.

RECURRENT, DESQUAMATIVE, SCARLATINIFORM ERYTHEMA.

Crocker [4] relates two instances of this affection. Its importance lies in the difficulty of differentiating it from scarlet fever, and undoubtedly many such mistakes are continually being made.

His first case was that of a hospital nurse, thirty-one years of age, who entered the University College Hospital in January, 1897, with her fifth attack. Her first attack of all had occurred nine years previously, of a milder character than those following, consisting of an erythema first of the face and then extending to the body, followed by slight scaling. After this she had several attacks similar to the present one. The face was of a deep red color and scaling, the front of the body the seat of a brawny desquamation, while on the backs of the hands the skin had entirely peeled off, leaving a scaling surface beneath. The lower limbs were also in a markedly scaling condition. At the outset of the attack the joints had been swollen and painful on motion and the temperature slightly raised. The affection continued with intermissions for about two months. There were several exacerbations, a bright red erythema appearing before the desquamation from the last outbreak had disappeared. Some slight constitutional symptoms accompanied the exacerbations.

The second case was that of a man of twenty-one

[3] American Journal of the Medical Sciences, January, 1899.
[4] British Journal of Dermatology, May, 1899.

who entered the hospital with his third attack of the disease. He presented a bright-red scarlatiniform eruption over the trunk and thighs. There were slight temperature changes, but no marked constitutional disturbance. After a week or ten days there was universal desquamation.

Crocker asserts that the first attack occurs most frequently between thirty and forty, although it may come at any time. It has occurred more often in men than in women. Its most salient features are its rapid invasion, followed by desquamation in large patches a few days after its onset, its tendency to relapse and to recur at intervals of months or years. The most important points in distinguishing it from scarlet fever are the short duration of prodromal symptoms, the appearance of the eruption in a way not characteristic of scarlet fever, the lower range of temperature, and the abrupt desquamation in large flakes three or four days after the beginning. The treatment is uniform temperature, rest in bed, and softening of the skin with olive oil or some bland ointment. Full doses of perchloride of iron may be given, on the theory that the disease is due to a toxin. In the first case salicin seemed to ward off a relapse and is therefore worth trying in the future.

(*To be continued.*)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

Regular meeting was held March 13th, the President, Dr. R. H. Fitz, in the chair.

Dr. J. B. Blake reported on the

ADMINISTRATION OF ETHER AT THE BOSTON CITY HOSPITAL.[1]

Dr. Broughton: Was there any evidence of persistent thirst after the use of atropia in the laparotomy operations or in case of large hemorrhage?

Dr. Blake: In one or two cases the patient complained of thirst, but in the majority of cases in which atropine was used there was no such complaint, although the direct question was put to them. Children stand atropine particularly well. A dose of one one-hundredth of a grain may be given to almost any child over four years of age.

Dr. Blake: Instruction in etherization for students is part of the medical school work. So far as I know there is no provision for actual etherization to be carried on by the students themselves. At the City Hospital Dr. Burrell always gives one or two clinics a year in which he demonstrates the administration of ether, chloroform and gas, and from time to time he asks members of the fourth class to give ether, but so far as I know there is no provision to allow men of the fourth year to etherize for themselves.

Dr. Vickery: I think very much of atropine as preparatory to etherization. I am quite sure it is a great help in many cases. I have usually given one one-hundredth of a grain by the mouth about fifteen minutes before the anesthetic.

[1] See page 312 of the Journal.

Dr. Arthur C. Jelly read a paper entitled

DEPARTMENT OF MENTAL DISEASES AT THE BOSTON DISPENSARY.[2]

Dr. Channing: It has always seemed to be very unfortunate that the city of Boston had no proper place to receive emergency cases of insanity. A patient with typhoid fever, or a child with diphtheria, or a man with a broken leg has some place to go to, but a man who requires immediate treatment of the most delicate kind, in which not only the medical but the social elements must be considered, has now no place to go in the city of Boston when he is suddenly taken with an attack of insanity except to the city prison, with the exception, I might say, of the Boston Lunatic Hospital, where he may be taken with emergency papers. A certain number of cases go there, but only a small number. As we all know, mental disease, like other diseases, has an incipient stage, and while the symptoms are not always very distinct if one is familiar with them they generally can be made out, and it is in this incipient stage, if ever, that an attack of insanity may be averted. Of course it is the general practitioner who usually sees the cases in the early stage, and unfortunately mental disease, unlike other diseases, does not betray itself by very striking symptoms in this early stage frequently. There is usually a condition of depression, and the patient is more or less introspective and keeps his trouble, and as far as he can, his mental symptoms to himself, and therefore they go unrecognized until perhaps some sudden attack reveals the nature of the disease. I myself of course knew there were more or less of these cases, but had no idea how many of them there might be, until we had had some experience at the Boston Dispensary and I must say I have been surprised that so many cases have been brought to us and that they have come voluntarily, and that leads me to feel that something should be done if possible not only to furnish a hospital or place where emergency cases can be received, but some other place where cases can be taken for observation or can be treated for a while. As we all know, in the homes of the poor there are very few facilities for taking care of a person who requires rest and good food and medical treatment or constant medical observation. I hoped at one time that I could myself, in connection with my work at the dispensary, open a private free hospital in the city for mild cases of mental disease or cases which were on the border line, or were not fully developed, and I went so far as to get a license for a place of that kind and had the refusal of a house, but on the whole I regarded it as rather too much of an undertaking for me to have the responsibility of personally. I now, however, have the license and what I wish very much to do is to get a few other physicians to combine with me and see if we cannot take the first step toward establishing what we should have here, that is, a hospital for the early and emergency treatment of cases of mental disease. The treatment in the public hospitals of developed cases is as good as we could expect. The general classifications of the insane in the State institutions is very good, but taking what should be an ideal system, there are still some very important factors left out. We should especially have some institution for the early observation of cases, and if we had here in Boston an institution of that sort a great

[2] See page 310 of the Journal.

many patients might be kept from being regularly committed and we should have more confidence on the part of the public in institutions and more would be willing to put themselves under treatment. One great difficulty now is that very naturally persons who are beginning to be insane dread to have the fact known, or their friends dread to have it known, because they fear they will be arrested or committed to an insane asylum and they regard that as a stigma to be avoided by every possible means, and if we could have here in Boston a fairly good sized hospital, with possibly an out-patient department, and there take such cases, I am sure in time we should very much help along the general cause of the proper treatment of the insane, and indirectly save the taxpayers a large amount of money.

DR. BULLARD: It is perhaps not known to Dr. Channing that this subject has already been taken up by other persons. The Executive Committee of the Hospital Trustees' Association at their meeting in December voted that action should be taken in relation to a proper place for the reception of such insane persons as were picked up on the streets or were otherwise found in Boston and are now likely to be taken in charge either at the Tombs or at Deer Island, and a committee was appointed, of which Dr. Stedman and myself were members, for the purpose of seeing what could be done in this direction. It appears this plan had also been considered by some of the city authorities and Mr. Marshall, commissioner of penal institutions, had intended to present a recommendation for such a plan in his forthcoming report. I have seen Mayor Quincy, who is apparently favorably disposed to the city's taking some action on this matter, and Mr. Marshall has now under consideration the exact means by which this can be best accomplished. The plan was to obtain a building to contain perhaps ten beds with proper attendants, to which such people could be brought, to be kept there a few days until it could be decided by the proper physicians whether they were insane and should be transferred to asylums, whether they should be taken in charge of by friends, or were not insane and should be sent elsewhere. I think that the need for such a place in Boston must be apparent to every physician who has had active practice with this class of patients. There are now a considerable number of persons taken to the Tombs and to Deer Island in regard to whose sanity there is considerable doubt and the examining physicians are required to examine them either at the Tombs or Deer Island and report upon their conditions, whereas such examination should be made in certain cases before they are taken to any penal institution whatever. I think perhaps Dr. Prescott can explain the plans of the commissioner.

DR. GEORGE JELLY: The reader's paper is interesting as showing the development of a new work in Boston which I think is important. Heretofore there has been no public place where mild cases could be treated and the reports certainly show that it has been of benefit. The thing I wish to speak of more particularly, however, is this place of observation, the observation hospital of which I have been in favor and have advocated for a great many years. Perhaps it would not be amiss to explain a little more fully how we are situated at the present time. The medical work of the department of public institutions has been for some years in the hands of Dr. Waterman and myself, with whom are now associated Dr. Prescott and Dr. Arthur Jelly as assistants who act in our absence. The working is something like this: every case of so-called insanity which includes all the cases of delirium tremens which are arrested on the streets of Boston, or for making disturbance anywhere and thought to be insane, are reported to the office. They are brought to the city prison and reported there. It becomes our duty to examine those cases. There are a very large number of delirium tremens cases, many of them in a very wretched and weak condition. They are very properly sent, I think, at present to the hospital at Deer Island, where there is a very comfortable hospital and where it is wonderful to see how these miserable cases of delirium tremens do improve. There is this other class of patients for which there is no provision in Boston. There are doubtful cases — the cases we have to see often very rapidly because frequently they are not brought in before 10.30 or 11 o'clock and if we commit them they must be committed by 12 or a little after. Some of the cases are unable to give any account of themselves. In some cases there is the question of liquor and a positive diagnosis cannot then be made. For those cases there is at present no proper provision. We are obliged to send them to the hospital at Deer Island. There they are put under the care of the resident physician and not discharged until reported back to the office at Boston. That I do not think is the proper place for them.

Sometimes there are very respectable people whose homes and whose relatives we cannot find, though an effort is always made. The work has been done very conservatively and we have tried to be very careful, and thus far have had no suits for maltreatment or false commitment. There is the other class of very violent cases whose friends cannot be found, in which there is no doubt of their insanity and who are proper cases of commitment, but perhaps the judges may have gone home, it may be Saturday night or Sunday, and a certain proportion of those cases we have been in the habit of sending to the Boston Insane Hospital on emergency papers. Those papers have been rather difficult to make out. We had to have the signature of the mayor, certificate of two physicians, sign a bond of $100 that the patient shall be either properly committed within five days or removed to a hospital. It has been my custom to sign the bond and get the signature of the mayor. At present under the provision of the law of 1898, the clause requiring the signature of one of the aldermen or mayor has been abolished, so that all we need now is the certificate of two physicians, a statement of his condition, that it shall be a case requiring immediate treatment and a bond which anybody signs. For that class of patients and the doubtful cases of insanity we need proper provision very much, and I think it is a shame we do not have a place in Boston such as has been alluded to by the reader and the other speakers. There is some such department as that in Bellevue, though I understand the requirements are not up to the modern standard. I am glad this thing has come up. It has been in the air a good while, and I hope with the assistance of Dr. Bullard and Dr. Stedman and the other members we may get some place, and then there will be nothing that can prejudice a person against treatment. There are friends of patients now who object to have their friends sent to an insane asylum without being consulted and we cannot find the friends. There is that

class of respectable people who are strongly prejudiced against having them sent to a hospital which is connected with a penal institution. I myself, and I have no doubt Dr. Waterman will tell you the same, feel very anxious that something shall be done.

In reply to a question by Dr. Bullard, Dr. Jelly said that transportation of emergency cases was provided for in this way: We find a case Saturday night or Sunday morning; we make out the papers and get the regular transportation officer who has charge of all of the cases of transportation, and order from the station or city prison a carriage, and send one or two policemen with the patient.

Dr. Bullard: The difficulty of transportation is sometimes very great to a private physician.

Dr. Jelly: I suppose that the expense must eventually come upon the department of institutions and that they should require the approval of the bill by Dr. Waterman or myself. In private cases where the friends have any means the family would, of course, pay all expenses.

Dr. Waterman: I hardly think there is much that I can add to the exhaustive remarks of the other gentlemen. Dr. Jelly has explained to you in full detail the various maneuvres by which the suspected cases of insanity are taken care of. For a long time I have felt, as he and the others have expressed themselves, the need of a special small hospital equipped somewhat as has been mentioned, although I think that but few of the patients whom we see actually *suffer* for the need of such a hospital. The police, as I understand it, have distinct orders from their superintendent that in case a person is making a disturbance or for any reason requires to be arrested, if there is the slightest suspicion he is insane he is to be detained in the station-house but for a moment and then immediately sent to the city prison. The vast majority of these cases are cases of delirium tremens, which do not suffer from their detention at the city prison. I have never found any difficulty where I have seen a person who was really in a critical condition, so far as danger to life is concerned, from an attack of delirium tremens that Dr. Rowe was not quite willing to admit the patient to the City Hospital. Of course they dislike to have those cases there, but they take our word for it that the person is in a critical condition and when the hour is so late that they cannot be sent to the hospital at Deer Island they are taken and kept a day or so, until we can send them in an ambulance from the City Hospital to the boat and from the boat to the hospital at Deer Island, if they have improved so that they can safely bear the transfer. The hospital at Deer Island is certainly a very admirable little institution and although at first many of the friends of border-line cases object to their going there for observation until their case can be accurately determined, still they are pretty reasonable on the whole when it is explained to them that it is a hospital entirely separate from the penal portion of the institution and admirably conducted. They then usually consent. The cases which should be placed in this proposed observation hospital are the rare and unusual cases, and those of course are sure to happen, as Victor Hugo says about the unexpected — it must always be looked for; for instance, gentlemen who are temporarily sojourning in the city and have had a previous attack of acute mania and suddenly break down at a hotel and become violently insane; it seems as though a padded cell in the city prison was not quite the place for a gentleman under those circumstances, and the same is true occasionally of ladies. It is not extremely rare that we see a lady both by birth and education who has wandered away from home on some sudden impulse and is found conducting herself in an unseemly manner on the street and is taken to the city prison and of course, if she is very violent, she is placed in a padded cell. Then there are a number of senile dements who are perfectly tractable at home, both male and female, harmless, requiring to be watched, and they will sooner or later wander away and get lost, and oftentimes go out in the most unsuitable weather, are found wandering about in the suburbs in a driving snow storm or pouring rain, and are brought by the police to the city prison because they are unable to tell who they are or where they live, and oftentimes the friends do not appear within twenty-four to thirty-six hours, in which case they, as a matter of humanity, must go to the hospital at Deer Island and not be allowed to remain in a cell at the city prison, although it is quite true that both the keeper and the matron of the house are admirably qualified for their positions and take the greatest pains to carry out our instructions as regards food and remedies so far as lies in their power. Of course, persons are often so violent that it is imperative to place them in a padded cell; sometimes it is not safe to let them have a mattress because they have been known to tear everything to pieces and at times they have caused fires, so that I can but agree most fully in the necessity of a small observation hospital of the kind which has been mentioned, and I think that the broad law of humanity, which allows us to send these cases to the hospital at Deer Island, would certainly allow us to keep them in such a hospital, and once being there, their friends coming to see them, and finding them well cared for, would be quite willing they should remain there until their mental condition, which is oftentimes in abeyance, could be fully determined.

Dr. Knapp: I am certainly very much surprised to hear Dr. George Jelly make the statement that until this department at the dispensary was founded there was no place for the public treatment or diagnosis of the mild cases of insanity here in Boston, because certainly at the City Hospital, and I think at the Massachusetts Hospital, the cases of mental disease form a not insignificant part in the clinic of nervous diseases. I took occasion to glance over the last report of the City Hospital and if we include as mental cases the neurasthenic and hysterical patients, many of whom have very striking and interesting mental symptoms, the mental cases form about one-fifth of the whole number of nervous out-patients, and I presume the cases are much the same in the nervous department at the Massachusetts Hospital.

I agree fully with what has been said as to the necessity for some sort of a reception house or some method of treating the doubtful cases of insanity and the acute cases other than putting them in the city prison or sending them to the hospital at Deer Island. Sending them to the city prison is a relic of barbarism which I believe should be stopped as soon as possible. So far as the sudden and violent cases of insanity go, the laws are tolerably good in the provision which has been made for the emergency commitments, if they were put in force a little oftener than they are, and as Dr. Lane in a letter to the *Boston Medical and Surgi-*

cal Journal a short time ago has shown, we are ready at the Boston Insane Hospital to take such cases. As a matter of fact we do take a very considerable number of cases, not only of city cases but also of State cases, and with the further development of the Boston Insane Hospital that provision for emergency cases will be still better. There is another class of cases and a very important class, which Dr. Channing has referred to, the incipient cases, the doubtful cases, and, given a reception house, the question is where they can go. Under the present laws they cannot be sent anywhere unless they wish to go. If they are willing they can go as voluntary patients to the insane hospitals or they can go as voluntary patients to the general hospitals. Various doubtful cases of mental disease which I see in the Out-patient Department of the City Hospital are referred to the house and kept there occasionally for observation if they are willing to go, supposing they are not willing to come under medical observation, as is often the case — then we can do nothing and there is not the slightest chance of getting any change in the laws whereby a person, not certainly insane, can be deprived of his liberty against his will. There are very many cases of incipient or doubtful mental diseases who would refuse to go to an insane hospital as voluntary patients, would even refuse to go to a general hospital as voluntary patients, and in the present provision of the law they cannot be sent anywhere, nor would a reception house, if one were started, be any better than the hospitals which exist. If those patients could be persuaded to go to a proper place, such as one of the private hospitals, or to the Boston Insane Hospital, as voluntary patients, they could be placed under proper observation. If some of the provisions of the present voluntary admission law were altered, and the objections to the reception of such cases due to the settlement laws were obviated, a good many such cases could be received and they could get proper observation and treatment in the early stages. It should be our effort to encourage, by voluntary entrance to the hospital, the early hospital treatment of incipient mental disease or cases which are not sufficiently insane to warrant commitment. There is thus a place for emergency cases of insanity in Boston and there might be facilities in Boston for treatment of cases which were not distinctly insane, or for the observation of the cases if the patients could be induced to go.

I must say I am sorry to hear the plan which has been proposed by Dr. Prescott and Mr. Marshall for a small house somewhere near the Court House for the reception of these doubtful cases of mental disease. Under this plan they are not under medical observation, they are simply in charge of a matron and a male nurse. They might call in certain physicians from time to time to see them, but the condition is not so very much better than if they were put in a thick-walled padded cell in the Tombs. It seems to me we should urge one of two things. Dr. Arthur Jelly has suggested a third, a separate institution in the way of a more or less fully equipped hospital. That, in the first place, is a very expensive thing if it is to be a hospital to accommodate any considerable number of cases, and it does not seem to me a necessary thing. It seems to me that what we need is one of two things: either an observation ward in connection with some existing insane hospital or an observation ward in connection with some general hospital. Such a ward in connection with the Massachusetts General Hospital or the City Hospital would be in the first place a comparatively inexpensive structure; it would require no separate administration or maintenance; it would be an easy and simple thing to manage. The patients could be sent there; ambulances could be sent for them as ambulances are sent for other emergencies and accidents. They could be put in a ward where they would be under careful observation, where the decision could be made as to whether or not they should go to an insane hospital. To send them out to Austin Farm involves, of course, a longer journey, and there is not at present such a thing as an ambulance service, although it is possible that if the need were sufficiently great we could in time develop some method whereby a carriage or an ambulance, with some suitable attendant, could be sent for an emergency case. That is a problem which has not occurred to me before, but it is a thing I think we certainly could develop at the Boston Insane Hospital if the necessity came. Therefore, it seems to me, the essential thing must be an observation ward, like the insane pavilion at Bellevue, only better than that — an observation ward preferably in connection with a general hospital where you would have all the facilities of a general hospital at hand and where patients could be received, not only the excited cases but also the doubtful cases and many mild cases. These need not come into a special observation ward at all; they could go into the general wards with other patients. A small building with ten to twenty beds in connection with a general hospital seems to me a better solution of the difficulty than to build a reception house with padded cells and no constant medical supervision, and run it as an independent hospital.

DR. CHANNING: This reception-house egg which has been sat on recently is very well as far as it goes, but it is only so far an egg and, like a good many other city projects, may never hatch out into anything, but it certainly will be an entering wedge. In my opinion, it will only take care of a small number of the more acute and violent cases, and while it would be very much better than nothing it by no means covers the whole ground. It seems to me it is very important in taking care of the insane in a city like this to have a place where the mild and border-line cases already spoken of can be received, and if you have accommodations in a reception house for so small a number as ten you can only take a small proportion of such cases.

The department of mental disease at the dispensary serves the purpose of further classifying the various kinds of cases that come to a dispensary or a hospital. We know that many mental cases come to the departments for nervous diseases in the general hospitals, and we get most of our cases referred from those hospitals. Our experience is that our department has been a means of bringing such cases together and getting up an interest in them.

DR. GEORGE JELLY: I did not intend to ignore the City Hospital or the Massachusetts General Hospital in the departments Dr. Knapp has mentioned. I meant simply that the department at the dispensary was the only one especially devoted to the work of mental diseases.

PROFESSOR PFEIFFER, of the Institute for Infectious Diseases at Berlin, has been appointed professor of hygiene at Königsberg.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

TWENTY-FIRST ANNUAL CONGRESS, HELD IN CHICAGO, MAY 22, 23 AND 24, 1899.

(Concluded from No. 12, p. 298.)

SECOND DAY.

THE RELATION OF PATHOLOGICAL CONDITIONS IN THE ETHMOID REGION OF THE NOSE, AND ASTHMA

was considered by the Association, the discussion being opened by DR. HENRY L. SWAIN, of New Haven, in a paper on

PATHOLOGY.

The title assumes that a relation is supposed to exist or does exist, and if the latter, what sort of relation is it? Shall we consider that the nasal condition produces the asthma or is the ethmoid condition an accidental complication of the asthma? Or are they both the outcome of some depraved condition of the general system which has its outward expression in these two disease processes, and if the latter is the case what is the exact rôle of the nasal disease in the asthmatic complex?

Asthma means hyperesthesia of the bronchial lining with a resulting explosion of energy. In addition, some other structures are diseased, excitation of which sets up the bronchial spasm. The connection between these two is the vasomotor system — the neurotic habit. The nose is only one of many diseased sites which can produce an asthmatic attack. What is the initiatory stage of the latter and why does it occur? It may arise from some intranasal irritation, but the presence of polypi, for instance, does not offer the final explanation, for potassium iodide or a change of environment will often relieve our patient even though the polypi remain. These changes of environment and of mode of life may be only very trivial apparently, but may exercise a vast effect upon the patient's well-being. A case was narrated in which the mere change from a feather to a hair pillow completely relieved the attacks. Until this change was made, all therapeutic resources were useless, and after the subsidence of the attacks from the relief of intranasal irritation, several pathological conditions in the nose cleared up of their own accord. We have here an illustration of the fact that certain irritations applied to certain nerve fibres will produce congestion and chronic inflammation with swelling and watery discharge. Then come soaking of the tissues, edematous changes and polypi.

In many of these cases of hyperesthetic mucosa there seems to be all over the body a thinness or flabbiness of the blood-vessel walls and a vasomotor responsiveness to irritation which make possible the explosions which are the bane of the existence of these afflicted mortals.

This character of vessel wall may be the inherent peculiarity of the neurotic subject. Such a theory would explain the headache, asthma, neuralgia, etc., which at the start are only vasomotor spasms. Later, by continued distention of the vessels, these walls become permanently stretched and flabby and thus organic lesions are possible.

In general, the ethmoid or middle-turbinate changes in all these cases are hypertrophic and confined to the mucosa. In over 60 cases purulent ethmoiditis was found only three times and in these it was secondary to long previous existence of edematous tissue. Disease of the bony structures occurred in this same series of cases some six or eight times without purulent conditions and was here due to polyp formation. Septal spurs and bends serve to keep up the middle turbinate disease and increase the possibility of pressure.

We have therefore to explain the production of edematous and other hypertrophies. This probably results from repeated irritations which gradually lead to vascular relaxation and the occurrence of edematous tissue. In turn come contact areas and areas of pressure. With the latter present, the initiative of the asthmatic attack is easy if at the same time our bronchial apparatus is also diseased or susceptible. Cooling off of the night air, for example, as always occurs along towards morning, the recumbent position favoring the flux of blood to the head, may be the immediate excitant. Suddenly the sensitive nerves in the edematous areas are stimulated and an increased flow of blood to the nose causes swelling and immediate increase of pressure.

We have assumed an excessive nerve sensitiveness and hence the pressure which could not affect a normal nerve will in our sensitive individual bring into play the reflex action in the bronchial tract, disturbing the latter's vasomotor equilibrium. The mucosa swells, the pneumogastric filaments are stimulated and then occurs the spasm of the bronchial musculature. This line of reasoning explains why intranasal pressure causes asthma and how its removal relieves the latter. In cases where the asthma persists after the removal it may be that, the avenues having become established, it takes only the slightest irritation of the hypersensitive nerves to start an impulse to set the bronchi into a spasm without actual pressure on the contact areas.

There are, of course, asthmatics whose attacks are not apparently nasal but who are nevertheless made very much better and sometimes entirely relieved by removing any existing nasal disease. Such people have their disturbance only under peculiar conditions, such as excesses, disturbed kidneys, rheumatism, or, in women, the onset of the monthly period. These work apparently through the vasomotor link in our chain of sequences. Some cases we find difficulty in explaining from any known point of view. Occasionally we find our only remedy in change of environment.

CLINICAL PHASES OF THE SUBJECT.

DR. E. FLETCHER INGALS, of Chicago, said that he had not found asthma associated with polypi as often as seemed to be the experience of others. Many cases came from riding behind horses, being near a stable, etc. It was not in these cases merely a question of dust, for these same people could ride a bicycle or behind oxen. In three cases the patients had asserted that they had had dyspnea from only one lung and that corresponded to the side in which in these cases presented intranasal lesions. One patient was subject to asthmatic attacks when on the ground, but was relieved by going to the sixth story of a building. Removal from one house to another of the same character only a few blocks away has cured others. A change from one part of a house to another even has sufficed to relieve some cases. He had found that inhalations of a spray containing three per cent. of cocaine and five per cent. of sodium nitrite would often relieve apparently by a reduction of the bronchial mucosa's sensitiveness.

DR. F. H. BOSWORTH, of New York, discussed the question of

TREATMENT.

He believed that the whole question turned upon the integrity of the respiratory function of the nose. The bronchi were only air conductors, but there was an intimate relation between their mucosa and that of the nares. In asthma the condition was one of vasomotor paresis, not of muscular spasm. Behind the polypi, the polypoid degeneration and the edematous hypertrophy is an ethmoiditis (not necessarily of the purulent variety), which either burrows into the middle turbinate, which thus becomes in a sense the outlying portion of the ethmoid, or may crowd the turbinate against the septum without hollowing it out. The cause is the occlusion of the normal anterior and posterior ethmoidal orifices from mild acute inflammation set up by a cold on the foundation of an old chronic hypertrophy of the mucosa. In the ethmoid cells the lining takes on an edematous character and there result intracellular pressure from distention.

The great indication for treatment, therefore, is to treat the ethmoiditis, to relieve the intracellular pressure by breaking down the honeycombed mass. A radical operation is necessary. It is not enough merely to remove the polypi. We must uncap the egg-shell-like structure of the diseased ethmoid. Points of contact should also be obliterated, not so much because of the pressure there exerted but because they encroach on the lumen of the nares. In his own experience, cutting forceps was unsatisfactory. He preferred rounded and oval burrs from one-sixteenth to one-quarter inch in diameter driven by power of any sort. We should burr down, stop, use burr as probe, then revolve it again until all the thin trabeculæ are broken down and free drainage established. In 99 out of 100 cases, treatment confined to the anterior cells would be sufficient. He had never had bad results with the burr. He formerly held that if cocaine applied to the nose did not relieve an asthmatic attack, it was useless to do any intranasal operation, but he does not now hold to this exclusive view. Purulent ethmoid disease does not give asthma, but inflammatory disease does. Many colds in the head are doubtless acute ethmoiditis.

The general discussion was opened by DR. E. L. SHURLY, who remarked that the question was a difficult one to settle on account of the complex physiology of the vasomotor system. We should look farther back than ethmoiditis and the edematous rhinitis. Recent experiments have shown that the filaments from the cranial nerves and spinal cord are really conducting cables and that in the same one there may be filaments for various functions. In different animals and different individuals of the same group there is a great difference in the communicating branches between the nerve trunks. These anatomical variations explain the peculiarities in individual cases. Moreover it must not be forgotten that the nose has an olfactory as well as a respiratory office, though in man the former function is very rudimentary. Impulses may travel along the sensory filaments and owing to defective insulation, as it were, may produce hyperesthesia. Our cases must be divided into those due to local disease and those due to psychic influence.

Dr. Shurly felt that he must take exception to the statement that the bronchial tubes were mere air conduits. There is a peculiar arrangement of the adenoid tissue in them, the functions of which we do not know, as we are but little acquainted with its biochemistry. In his personal experience, in the majority of cases asthma was not accompanied by any sensible derangement of the nose.

DR. J. N. MCKENZIE, of Baltimore, said that the primal cause of asthma was not confined to any special peripheral organ, but resides in the individual as a whole. The area of nerve explosion depends on the seat of the local pathological process. Irritation may come from a peripheral organ, as the nose, a distant organ, as the uterus, or from a general dyscrasia, as gout. On this theory mere contact areas and pressure points are of no value. Nasal cough may come in atrophic states. Final explanation is not to be sought in nasal or bronchial abnormalities, for all the theories thus far advanced fail to conform to the requirements of a logical hypothesis. All polypoid degeneration is not due to ethmoiditis, as is evidenced by both clinical and pathological observation. As to treatment, he had had no difficulty with forceps. It is useless to temporize. We must use curette, burr and gouge freely.

DR. MAKUEN said that asthma depended on faulty nervimuscular action, which might have a thousand exciting causes.

DR. THOMAS HUBBARD called attention to the autotoxemia theory. Such toxemia may be due to gastroenteric absorption or faulty elimination. Such possible factors must be borne in mind in the study of each individual case.

DR. F. E. HOPKINS, of Springfield, Mass., read a paper on

I. RECURRENCE OF THE TONSIL AFTER EXCISION; II. A CASE OF HYSTERICAL LARYNX.

A case of this nature was reported and a *résumé* given of the references to the subject during the period of modern laryngology. The history of the case of hysterical larynx will be found in the *Laryngoscope* for February, 1899, p. 97.

DR. FARLOW remarked that partial removal left behind diseased tissue, especially in the lower prolongation of the organ where the irritation of the lingual movements against its hardest part was apt to induce recurrence. The instrument usually employed was the guillotine, but the ideal one was an instrument which would actually get in between the anterior and posterior pillars. The latter were not the limit of the amount of tissue to be removed, which was the quantity of tonsillar tissue actually present. He strongly advocated the additional employment of the scissors or punch. He also called attention to the frequent development, especially in young adults, of the plica triangularis, or fold of tissue running down diagonally over the anterior surface of the tonsil, and which was often mistaken for part of the anterior pillar. This plica should be included in the tissue to be removed.

DR. NEWCOMB believed that recurrence often happened in tenement-house children from the fact that they were obliged to return after operation to the same bad general unhygienic environment which had occasioned the original disease.

DR. WOOLEN said that a tonsil once removed cannot return. He believed that what we call the tonsil is really a pathological product, which he viewed much in the same light as he would a wart or a papilloma,

not, indeed, always requiring removal. He had abandoned in this connection the terms "removal" and "excision," and now always employed instead "enucleation." He endeavored to enucleate with the guillotine, but had the fork removed from the instrument he employed, using instead a vulsellum in the other hand to lift the tonsil from its bed. He tested the organ removed with a probe passed into the crypts on the surface down through the tissue. If it reached a solid bottom, he knew he had removed the follicles entire, but if it easily passed through and came out on the other side, he was convinced that the operation had been incomplete. These nubbins of tissue thus left behind might easily provoke a subsequent quinsy.

Dr. D. Braden Kyle, of Philadelphia, would look upon a recurring tonsil as a purely pathological product, benign, it is true, and of a hyperplastic nature. It was the large, soft spongy tonsil which was apt to recur. The recurring mass was more a tumor than a tonsil, and somewhat in the order of an adenoma.

Dr. Makuen called attention to the necessity of properly separating adherent pillars before any instrument for removal was applied, and had devised a special set of cutting blades for this purpose.

THIRD DAY.

Dr. E. Fletcher Ingals, of Chicago, read a paper entitled

FIBROLIPLOMA OF THE EPIGLOTTIS AND BASE OF TONGUE.

His patient was a farmer, age twenty-eight years, who for three or four years previous had had difficulty in breathing, swallowing and speaking. In 1896 the cautery had been applied along with scissors and snare to the base of the tongue, and a mass removed. He came under Dr. Ingals's observation in February of the present year. During the preceding two months there had been an aggravation of symptoms, especially dyspnea on lying down. A smooth mass could be seen, with a congested surface. It was in the laryngopharynx, apparently attached to the right side of the pharynx and base of the tongue, and appeared to be of a fibrous nature. Upon attempted removal with the cold snare (No. 5 wire), the wire broke three times. Later, removal was easily effected with a uterine écraseur properly bent, No. 8 wire being used. The mass measured from one to one and a half inches in its various diameters. There were other masses left behind, which were removed in the same manner at later sittings. Some were almost purely fibrous, some fatty and some of mixed type. Attachment was as above noted, with, in addition, the right side of the epiglottis. The patient was recently seen, and it was noted that the right side of the epiglottis had become adherent to the right side of the pharynx and base of the tongue. Such adhesions would prevent the epiglottis from closing down over the larynx during deglutition, but there was no difficulty with this function.

Dr. Woolen mentioned a somewhat similar case. The patient had been exhibited to students several times before operation and the wire slipped over the growth in order to show them the mode of removal. When the latter was finally attempted the patient suddenly ceased breathing. Artificial respiration restored him, but upon a second attempt the same accident happened and this time proved fatal. No anesthetic, local or general, had been used. If such had been used the sudden death would probably have been attributed to such use.

Dr. D. Braden Kyle, of Philadelphia, read a paper on

CONFINED SUPPURATION OF THE FRONTAL SINUS WITH SPONTANEOUS RUPTURE, INCLUDING REPORT OF A CASE.

The patient was a woman, age sixty, and seen on January, 1898. Her trouble had commenced with an initial fulness at the inner angle of the left orbit with a profuse nasal discharge. The face was swollen on the same (left) side and there was a slight tenderness. An attack of grippe about this time did not seem to materially increase the symptoms. Two months later the orbital swelling began to increase in size and finally a rupture with escape of pus occurred on the forehead a little to the left of the median line. It took two months after rupture to heal the wound. Dr. Kyle had been unable to find another exactly identical case, though several closely resembled it, the histories of which he gave.

Dr. John O. Roe, of Rochester, read a paper entitled

THE PRESENCE OF PARTITIONS AND DIVERTICULA AS A CAUSE OF RETARDED RECOVERY IN THE TREATMENT OF DISEASES OF THE MAXILLARY ANTRUM.

He said that in the treatment of antral disease, too little attention was paid to anatomical considerations. We should take into account: (1) The position of the sinus; (2) its size, shape and conformation; (3) the thickness of its walls, and (4) the relation of the tooth roots to its interior. A series of skulls was shown illustrating these points. Dr. Roe also showed an antrum searcher, consisting of a probe-pointed flexible steel spring running in a canula and capable of being projected from the latter after it was in the antrum. With this instrument the cavity of the antrum could be thoroughly explored through a very small opening. Dr. Roe used a saw to enlarge the latter if necessary rather than a rongeur forceps.

Dr. MacKenzie did not think it always necessary to interfere with septa in the antrum. It was important to remember that in some antra the ostium maxillare was high up and posterior to its normal site. In such cases the discharge would be more apt to drain posteriorly and appear high up in the nasopharynx and such location might determine failure in operation. In cases of painful sinusitis, politzerization of the cavities through the natural openings would often afford almost instant relief, and in cases of pain extending over a wide area often enable us to determine its exact point of origin. Drainage tubes he was inclined to look upon as pus-producers.

Dr. G. V. Woolen, of Indianapolis, read a paper entitled

TAKING COLD.

The writer summarized the current views upon this topic. He believed that external influences were reflected upon internal surfaces, thereby causing nutritional disturbances and the latter caused deficient calorification. He had found by a series of observations that persons who habitually take cold have a subnormal temperature — even as low as 95° — even in people who appear perfectly well-nourished, and this

subnormal temperature may explain much of their indefinite malaise. There is a deficient hematosis and this deficiency appears in the circulatory apparatus through vasomotor agencies. In some people this condition dates back to improper care as to bathing, etc., during the first week of life. This may be the critical period. If a child passes into adolescence without getting into the "taking cold" habit he regarded it as safe for life. This habit may in some instances be the reflection of hereditary syphilis in the third or fourth generation. This same deficient hematosis may also arise from nasal stenosis and precisely the same train of symptoms be set up.

DR. GOODALE said that we must not forget the rôle played by micro-organisms which appear to affect the lymphoid tissue. The symptoms of an ordinary cold are, in mild degree, those of bacterial infection; in moderately severe cases the staphylococcus, and in very severe the streptococcus, predominates.

DR. BOSWORTH could not quite agree with the preceding speaker, for the rapid onset of a coryza was often too quick for bacterial invasion to have taken place. We take cold in many other ways than in the head. Acute rhinitis is only a local expression of a general disturbance.

During the executive sessions the following were elected to Active Fellowship: Dr. F. C. Cobb, of Boston, thesis, "Peritonsillar Abscess"; Dr. J. F. McKernon, of New York, thesis, "A Contribution to the Technique of Modern Uranoplasty," and Dr. Max Thorner, of Cincinnati, thesis, "The Direct Examination of the Larynx in Children."

Election of officers for the coming year resulted as follows: President, Dr. Samuel Thurston, of Baltimore; First Vice-President, Dr. T. Amory de Blois, of Boston; Second Vice-President, Dr. Moreau Brown, of Chicago; Secretary and Treasurer, Dr. Henry L. Swain, of New Haven; Librarian, Dr. Joseph H. Bryan, of Washington; Member of Council, Dr. Wm. E. Casselberry, Chicago.

The next meeting will be held at Washington in connection with the Triennial Congress of the Association of American Physicians.

The following papers were read by title:

"Dermoid Cyst of the Nose," by DR. H. S. BURKETT, of Montreal.

"Atrophic Rhinitis, with Report of Cases," by DR. JAMES E. LOGAN, of Kansas City.

"Tuberculosis of the Pharynx, with Report of a Case in a Child," by DR. T. MELVILLE HARDIE, of Chicago.

"Syphilis of the Antrum of Highmore," by DR. H. L. WAGNER, of San Francisco.

"Report of two Cases of Accessory Thryoid at the Base of Tongue," by DR. A. W. WATSON, of Philadelphia.

"Remarks on Intranasal Operations," by DR. W. F. CHAPPELL, of New York.

"Pemphigus of the Larynx," by DR. J. H. BRYAN, of Washington, D. C.

"The Early Diagnosis of Aneurism of the Aortic Arch," by DR. WILLIAM PORTER, of St. Louis.

"A Report of the Operative Treatment of Several Cases of Frontal and Maxillary Sinusitis," by DR. F. W. HINKEL, of Buffalo.

"Report of a Case of Abscess of the Frontal Ethmoid and Sphenoidal Sinuses, Meningitis, Death," by DR. J. H. BRYAN, of Washington.

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SETTLEMENT OF SUITS FOR DAMAGES OUT OF COURT.

WE have recently heard with satisfaction that there is a growing tendency in the large corporations to settle suits brought against them without the formality of court proceedings. This is an attitude which we have long felt would conduce greatly to a solution of the difficult problems of responsibility on the one hand, and over-exaggeration of injury for personal ends on the other. Leaving out of the question the definite physical injuries of a surgical sort, about which there is little controversy as a rule, we find that the great majority of persons who seek redress for injuries are afflicted with certain disorders of the nervous system, which, as every one knows, have been the subject of much skilful polemic for many years. There is, no doubt, in this matter opportunity for perfectly legitimate difference of opinion on the part of well-trained and entirely conscientious physicians, a fact too little recognized by the courts. This difference of opinion is continually being exaggerated, and in the eyes of the laity and the legal fraternity is no doubt assuming a significance which does not properly belong to it. Among physicians expert in the interpretation of nervous symptoms, a much greater unanimity of opinion prevails regarding this class of cases than appears on the surface. The encouragement given by the courts to men who are not experts, and whose opinion would count for little in matters relating to the nervous system within their profession, is a standing reproach. This the courts naturally enough encourage and physicians too often yield to the temptation to appear as so called "experts," in matters regarding which they have no adequate knowledge. The remedy for this must come from the doctors and not from the lawyers. Taking, however, only those whose studies warrant them in being classed as experts in the nervous affections following accident, we find still manifold differences of opinion, and yet a growing tendency to virtual agreement. We are, for example, of the opinion that "simulation" as a weapon of defence has

practically ceased to exist. Even those whose inclination it is to minimize the psychical effects of injury are careful to avoid this term, and every one who thinks is, no doubt, coming to see that simulation in the popular sense is relatively seldom met with, and when met is readily detected. The more subtle questions of auto-suggestion and general cultivation of a neurotic state in a semi-involuntary fashion, for the gaining of ulterior ends, is quite a different matter, and one which clearly requires the closest psychological analysis. This is of fundamental social as well as medical importance, and a matter which the combined efforts of the courts and the doctors will, no doubt, be long in settling.

In the meantime, from a purely practical point of view, what is the best solution of each individual case? Naturally, no general rule is to be laid down, but we think that settlement out of court meets the requirements in the great majority of cases in the most satisfactory possible way to all concerned, and for the following reasons: In the first place, from the patient's point of view, here is a common history: A person is injured through carelessness on the part of the employees of some corporation. The injury, so far as physical signs go, is trivial; the nervous excitement incident to the accident is considerable. The extent of the injury is enhanced in the patient's mind by the solicitous lawyer, and still more so by the frequent medical examinations which immediately supervene. Unique experiences of various sorts and an inevitable sense of importance are thrust upon the patient, which evidently do not conduce to spontaneous recovery. At the end of this preliminary period, his nervous system, quite regardless of the original accident, must naturally be in a state of turmoil. This, combined with the primary shock of the accident, makes the situation sufficiently deplorable. Unfortunately this is merely the beginning. From one to two years must elapse before the dreaded trial takes place; in the meantime the patient's chief employment is introspection of the most concentrated sort, fostered and encouraged by lawyers and friends. Finally, after more examinations the trial begins, and is it to be wondered at that the patient impresses the jury as a very sick person, in whom there is not a shadow of simulation, and that damages in proportion are awarded? This is the usual course of justice. To the patient, frequently, the money return is absolutely no compensation for the suffering already endured, and to come, and the pitiable part of it is that so much of it might have been avoided. To say that these patients all get well after the award of damages is nowadays a mere confession of ignorance. To the patient, then, the method of trial, with all it entails of anxiety and unusual experiences, is absolutely detrimental.

How is it for the corporation concerned? In our opinion equally detrimental, but in quite a different way. A condition which perhaps was at first trivial has become serious, and the corporation is paying damages not only for the accident, but also for the disorders engendered through the whole period antedating the trial. Experience amply shows that juries are not going to discriminate between the immediate and remote results of the accident; their decision is reached through a consideration of all the facts up to the time of trial, as it should be. Under these circumstances it is clear that the awards are often out of proportion to the original injury for which suit is brought, and properly so, if we are to persist in our present methods of delayed settlements. The defendant often pays for a condition which its own determination to "fight the case" has done everything to cultivate and encourage. In this way an injustice is done not only to the plaintiff, by fostering morbid tendencies, but also to the defendant, by exacting damages which are often absurdly in excess of the injury originally sustained.

Clearly a way out of this difficulty is through early settlements, an end which various more or less unworthy motives frequently tend to thwart. If the defendants, corporations and the like would get an unbiased opinion from trustworthy men, and then act conscientiously and quickly on the basis of such advice, we are confident that the plaintiffs would be spared much unnecessary annoyance and suffering, and the defendants would find much less occasion for making unreasonable inroads on their treasuries.

This is one point of view; there are, of course, others, and many occasions no doubt arise in which a long legal controversy is the only solution. The fact, however, remains, that the majority of cases might be settled out of court, to the decided advantage of all concerned. To accomplish this end, the defendants must be more liberal and the plaintiff less exacting, a state of things which we believe by no means unattainable, provided only the highest degree of conscientiousness on the part of physicians be brought to bear upon each individual case.

THE DREYFUS TRIAL *VS.* MEDICAL PROGRESS.

Now that the first excitement and indignation at the result of the Rennes court-martial has in a measure subsided, we are, no doubt, in a position to look more calmly upon all the facts of the case, particularly as these relate to our attitude towards that large portion of the population of France to which we are bound by common ties of scientific interest. Quite apart from our judgment as to the miscarriage of justice of which the civilized world has just been the witness should be our feeling toward the higher intellectual bonds which must remain unbroken. The threatened boycott of the Fair of 1900 has, apparently in some quarters gone even further, and led to the extraordinary spectacle of men seriously suggesting that the scientific gatherings about to take place in France be deprived of representation from other countries. This is beyond measure trivial, and shows an entirely hysterical attitude, which will no doubt

yield to common sense long before the various associations are expected to meet.

Both the *British Medical Journal* and the *Lancet* comment feelingly and forcibly on the situation. The *Lancet*, under the heading "The Rennes Verdict," arraigns the military party in France in no doubtful tone, and then goes on to say: "Meantime, let us not too hopelessly identify all France with the five judges of Rennes. We have been led to make these remarks in view of the storm of indignation that has arisen because of the condemnation of Captain Dreyfus by the court martial and the threats — indeed more than threats — that have been made to boycott the Paris Exhibition of 1900. The case, too, is not without its medical bearings, for a member of the profession has written to the press to suggest that practitioners, as a protest, should not send their patients to France this year. Moreover it must be remembered that the Thirteenth International Congress of Medicine, an International Congress on Medical Ethics, and other meetings of interest to medical men are to be held in Paris next year."

The *British Medical Journal* is evidently much less tentative than this, when it says, after speaking of the delirium into which the verdict has thrown the people of England:

"Edmund Burke long ago warned us against the folly of drawing an indictment against a whole nation. Apparently, however, a good many of us at present see neither injustice nor absurdity in condemning and punishing France for the crimes of some of the least worthy of her sons. The proposal to boycott the Paris Exhibition is bad enough, but what is to be said of the suggestion that English physicians should no longer send their patients to France? Unless we are to adopt the view that medical men send their patients abroad for the benefit of the foreign hotel keepers, the punishment intended for France will fall on the ailing Britons whose health might have been improved by its climate. A still more foolish proposal is that the medical profession of this country should boycott the congresses which are to be held in Paris in 1900. In plain terms, this means that because certain Frenchmen have done wrong we are to punish the world at large by hindering, as far as it lies in our power to do so, the progress of medical science."

In his recent presidential address before the British Association for the Advancement of Science Prof. Michael Foster, speaking of international co-operation in science, made the following pertinent remarks:

"Perhaps, however, not the least notable fact of international co-operation in science is the proposal which has been made within the last two years that the leading academies of the world should, by representatives, meet at intervals to discuss questions in which the learned of all lands are interested. A month hence a preliminary meeting of this kind will be held at Wiesbaden; and it is at least probable that the closing year of the nineteenth century, in which science has played so great a part, may at Paris during the great World's Fair — which every friend not of science only, but of humanity, trusts may not be put aside or even injured through any untoward event, and which promises to be an occasion not of pleasurable sight-seeing only, but also, by its many international congresses, of international communing in the search for truth — witness the first select Witenagemote of the science of the world.

"I make no apology for having thus touched on international co-operation. I should have been wanting had I not done so on the memorable occasion of this meeting. A hundred years ago two great nations were grappling with each other in a fierce struggle which had lasted, with pauses, for many years and was to last for many years to come; war was on every lip and in almost every heart. To-day this meeting has by a common wish been so arranged that those two nations should, in the persons of their men of science, draw as near together as they can, with nothing but the narrow streak of the Channel between them, in order that they may take counsel together on matters in which they have one interest and a common hope. May we not look upon this brotherly meeting as one of many signs that science, though she works in a silent manner and in ways unseen by many, is steadily making for peace?"

This is clearly the broader point of view, and the one which must inevitably prevail.

PROGRESS IN MILITARY SANITATION.

UNDER a recent circular, Department of California, a commissioned medical officer is to be detailed in orders to act as medical inspector of the regimental and recruit camps on the Presidio Reservation, with authority to exercise general supervision over the medical and sanitary conditions in these camps, *and to see that the provisions of this order are properly executed.* This circular marks a most important step in the progress of military sanitation, as it clothes the sanitary inspector with actual authority in his own department, places upon him the responsibility for the existence of unsanitary conditions and elevates him from the anomalous condition of mere medical adviser, without powers to accomplish the changes which may appear to him to be advisable. The action above noted will undoubtedly arouse the hostility of line officers, since even the colonel of a regiment may, under its provisions, become subordinate to the sanitary inspector of lesser rank. Hence, it is to be hoped that the medical officer selected to fill the latter position will, in addition to his excellent professional qualifications, possess that rare tact and moderation, combined with firmness, which will alone prevent undue opposition to the execution of this order. The system itself is on trial and a sanitary inspector of ill-balanced personality may do much to set back the progress of military hygiene for the immediate future. The lack of executive authority has been a cause

for bitter complaint on the part of sanitary officers and, with indifferent or unfriendly commanding officers, has done much to destroy interest and ambition and to render inspection a purely perfunctory performance. The order above noted places an undivided responsibility upon the sanitary officer and officially recognizes the value of his important duties. We feel that the Army Medical Department and the medical profession at large are entitled to congratulations for this hard-won victory.

MEDICAL NOTES.

The Congress of the Institute of Public Health, England. — The Congress was held September 21st, under the presidency of the Marquis of Lorne, at Blackpool. A feature of the Health Exhibition, in connection with this Congress, was a special exhibition and discussion on smoke abatement.

A Hospital Burned. — The hospital of St. Vincent de Paul at Norfolk, Virginia, has recently been almost completely destroyed by fire. Several inmates were killed, and it is said the property loss will reach the sum of $200,000, only partially covered by insurance. The loss is the greater because the hospital was regarded as one of the best equipped in the South.

A Gift to Jefferson Medical College. — It is reported that Dr. J. Ackerman Coles, of Newark, N. J., has offered several works of art to the Jefferson Medical College of Philadelphia, the most notable being a bust of Harvey, done by the sculptor Horatio Stone, at Rome, in 1869. Several other pieces of sculpture are also presented, all having belonged to the late Dr. Abraham Coles.

Quarantine against Tuberculosis. — It is reported that the Board of Health of California is proposing to establish a quarantine against all persons afflicted with tuberculosis, and the isolation of persons suffering from the disease. Certain precautions are, no doubt, advisable, but the strict enforcement of such a regulation is neither possible nor desirable, and the danger of infection does not warrant it.

A Case of Leprosy Originating in England. — Dr. J. Ross McMahon, writing in the *Lancet* for September 16th, reports a case of leprosy, which to all appearances had its origin in England. "The patient asserts that he has never left Britain, that he contracted the leprosy in England, and that he beheld in himself the first leper he ever wittingly saw." The source of the infection, however, is not clear, but the author suspects it may have been contracted from sheets in a bed at a third-rate hotel, in which a leprous woman is known to have slept.

Congress of Italian Alienists. — The tenth congress of Italian alienists will be held in Naples from October 10th to 14th, under the presidency of Professor Tamburini. The following are the subjects proposed for discussion: "Practical Methods of Individual Psychological Investigations in Asylums and Clinics;" "The Light which Has Been, and May Be, Thrown by Anatomical Data on Normal and Pathological Psychology;" "Psychiatry and the Study of the Individual and His Activity in Social Relations;" "Intoxications and Infections in the Pathogenesis of Mental Diseases and Neuropathies."

Medical Qualifications in Germany. — The Statistical Office has just published returns relative to medical qualifications in Germany, which show, according to the *Lancet*, that 1,314 candidates were qualified in 1898. Of this number 20 were foreigners, including eight Russians, four Swiss, three Dutchmen, two South Americans, one Englishman, one Mexican, and one African. The total duration of medical study varied considerably with different candidates: 986 studied for nine semesters, 168 for 10 semesters, and 211 for 11 semesters and upwards.

An Effort at Prophylaxis. — According to the *Journal of the American Medical Association*, a movement has been started among Philadelphia women, the aim of which is to wage war on disease, and its prevention by practical rules of hygiene. A meeting has been held, organization effected and a charter applied for. The organization will be known as the "Woman's Sanitary League of Pennsylvania." Its purpose is the advancement of sanitary science, the promotion of public health and good government, and the forming of country and local auxiliaries to extend the beneficent work. It is stated that the action of the St. Louis Board of Health in requiring the disinfection of all such materials as second-hand books and clothing is the precedent with which the committee presents its plea to the Philadelphia authorities. The subject of schools and school children, expectoration, and the summer diseases of childhood will all come in for their share of consideration.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, September 27, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 71, scarlet fever 23, measles 2, typhoid fever 31.

Vaccination in Schools. — With the opening of the schools the question of vaccinating the pupils has again come up, as is usual at this time of the year. Teachers are instructed by the Board of Health to look carefully after the pupils to see if they have been vaccinated. While the instructions this year are the same as heretofore, they are somewhat stricter, owing to the recent prevalence of small-pox, although there are now said to be no cases in the city. Such precautionary measures are certainly the best guarantee of public health.

NEW YORK.

MEDICAL AID AT THE DEWEY CELEBRATION. — The President of the City Board of Health has placed the entire resources of his department at the command of the authorities in charge of the Dewey reception, and every precaution will be taken for the rendering of prompt medical or surgical aid in case of need on the days of the celebration.

A DEATH FROM YELLOW FEVER. — Among the passengers of the transport *Buford*, which arrived from Cuba on September 18th, were a number of discharged soldiers of the First U. S. Infantry. One of them, a private named Oswald, who was slightly ill, was detained at quarantine under observation, and on the 21st was found to be suffering from yellow fever of the most severe type. He died of the disease on the following day.

SANITARIUMS FOR TUBERCULOSIS. — At a regular meeting of the State Board of Health which was held at the New York Quarantine Station on September 22d a resolution was adopted for the establishment by municipalities of sanitariums for the care of tuberculous patients, and of securing legislative action on the subject.

DEATH FROM AN ELECTRIC CURRENT. — A young clerk in an establishment in Brooklyn was instantly killed recently in turning on the current in an ordinary incandescent electric light, such as is now in such general use. The right side of his body was badly burned, and it is supposed that a heavily charged wire had in some way crossed the feed wire of the lamp.

CHRISTIAN SCIENCE AND THE LAW. — One of the principal papers at the annual meeting and shore dinner of the Westchester County Medical Society, which was held on Long Island Sound near New Rochelle, on September 19th, was read by W. A. Purrington, Esq., formerly counsel to the Medical Society of the County of New York, on the subject, "Christian Science before the Law." In the discussion following the paper the practitioners of this sect were severely criticized.

BEQUESTS TO A HOSPITAL AND ORPHAN ASYLUM. — By the will of the late E. Ray Thompson, of Troy, who was recently drowned at Etretat, France, $5,000 each is bequeathed to the Child's Hospital at Albany, and the Troy Orphan Asylum.

DAMAGES FOR AN ELEVATOR ACCIDENT. — In view of the comparative frequency of elevator accidents the following case is of considerable interest: A passenger elevator of the Bauland Company in Brooklyn, owing to a piece of bunting becoming entangled in its machinery, was caught in the elevator shaft at a point between the second and third floors of the building. After the engineer in charge had made several attempts to remove the obstruction, the ropes which controlled the action of the elevator were slackened by his direction, while he was making an attempt to disentangle the bunting. The rope controlling the governing mechanism of the car was thrown from a pulley, and the car fell to the bottom of the shaft, although the force of the fall was lessened to some extent by the safety cut-off. A young woman, twenty-four years old, who was a passenger and was injured by the accident, recovered judgment against the company, on the verdict of a jury, for $11,000. An affirmation of the judgment on defendant's appeal was unanimously directed by the Second Appellate Division of the Supreme Court. Justice Woodward, giving the opinion, held that in the circumstances the company was bound to use the very highest degree of care and skill, and that the evidence was sufficient to warrant the jury in finding that the defendant was guilty of negligence.

ARMY NOTES.

A COURSE OF LECTURES ON MEDICO-MILITARY SUBJECTS. — Major L. A. LaGarde, surgeon United States Army, now stationed at the Soldiers' Home, Washington, D.C., will deliver a course of lectures on medico-military subjects at the New York University and Bellevue Hospital Medical College during the coming winter. This addition to the curriculum, which it is expected will be permanent, includes not only military surgery but also the methods used for the selection of the recruit, the organization of field hospitals, military hygiene and first aid and the transportation of the wounded.

A HANDBOOK FOR SOLDIERS. — In consequence of the excellent results obtained at Santiago through the knowledge possessed by the soldiers of the principles of antisepsis and first aid to the injured, a small handbook on this subject, couched in the most simple language, is to be issued to troops. It is understood that the first issue, comprising fifteen thousand copies, will be largely distributed among the company and non-commissioned officers.

BATTALION MEDICAL CHEST FOR SMALL COMMANDS. — To meet the needs of small detached commands a small battalion medical chest has been devised, the present regimental chests, five in number, being unnecessarily large and elaborate. The new chest is about two and one-half feet long and about one and one-half feet square at the ends. Medicines are carried in square, japanned tins which fit snugly, without partitions, in a square at the bottom of the box. They are held in place by a tray having a compartment for non-extendable articles. The remainder of the space, two-thirds the contents of the box, is used for dressings or such articles as the exigencies of the service appear to require. There are but two partitions in the entire chest and the space so saved is utilized to great advantage. The chest carries medicines sufficient for 400 men for ninety days and dressings ample for a possible casualty list of about 25 per cent. of the command. The weight is slight and the

chest may be readily carried by one or two coolie bearers. The instruments are carried on the persons of the medical officer and his orderly.

REPORTS FROM TRANSPORT SURGEONS. — Circular 20, Department of California, prescribes that transport surgeons and medical officers in charge of transports will report upon arrival to the chief surgeon of the department. They are to submit a nominal list of each man of the hospital corps under their charge — stating his conduct, efficiency and availability for transport service, state the amount of medical supplies on hand and the amount required. A report must also be submitted showing the number of cases treated *en route*, with results and general character of the disease and injuries observed. This will be supplemented by such observations as medical officers may have to make on the practical workings of the transport service; the quantity and quality of supplies; treatment of the sick; defects observed and improvements suggested. Requisitions are to be made out for supplies to last during the round trip between San Francisco and Manila.

SANITARY PRECAUTIONS. — Circular 19, Department of California, constitutes a medical officer and a major of the line a regimental sanitary board for the proper sanitary condition of the regimental camp. It prohibits the sale of food or drink by civilians on the reservation and enjoins upon the quartermaster's department the duty of caring for all latrines and disposing of garbage.

Miscellany.

PRECAUTIONS AGAINST THE INTRODUCTION OF PLAGUE INTO ENGLAND.

THE proximity of cases of plague to England in Portugal has led to extraordinary precautions against its possible introduction into that country. The *British Medical Journal*, commenting on the subject, rightly say that cleanliness is, after all has been said, the most effective means to prevent the spread of filth diseases. We quote in part a vigorous statement of the present situation:

"In 1897 plague broke out in Bombay and the Local Government Board at once began to take precautionary measures against the contingency of its being carried into England, and have since continued to do so. A systematic inspection was since made not only of the larger English ports, their faults seen to and remedied, but all the small ports along the entire English coast have been inspected. Medical officers of health, harbor masters, etc., have all been put even more on the alert, and so well had the previous work of the Local Government Board been done, that in only two or three cases were their inspectors dissatisfied with the existing order of affairs. Small scattered seaports have been consolidated under a joint Board of Medical Supervision. The attention of local authorities has been specially drawn to ships' rats, as infection from plague has been traced to these vermin. The Local Government Board has arranged to have bacteriological examinations of the blood and purulent discharges from bubonic patients made in suspected cases. Further, not only are vessels from Portuguese ports being watched and inspected on arrival, but Spanish vessels will be looked after as well. Portugal is geographically a part of Spain, and it is scarcely to be hoped that with plague in Portugal her equally insanitary neighbor will remain immune. Old-fashioned quarantine is distinctly opposed to the true principles of preventive medicine, and has over and over again proved its uselessness. To take only one recent instance, in the European outbreak of 1892 cholera arrived at the Eastern border of the Caspian, which it might have been supposed would have been a good barrier; the most rigorous quarantine that has ever been imposed was put in force, ruining thousands and paralyzing trade; with what result? Cholera got over to the western border of the Caspian in ten days. Spain, Italy and Portugal uphold quarantine because, being poor, lazy and neglectful, they impose quarantine rather than take the trouble to clean and keep their filthy ports in order."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 16, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1194	514	15.13	10.53	9.09	1.44	2.25
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,340,226	364	132	15.39	12.42	6.21	3.24	3.51
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,483	222	81	17.55	10.35	7.20	4.50	3.15
Baltimore	505,295	179	68	21.84	8.76	13.38	3.35	3.92
Cincinnati	405,000	94	—	10.60	7.42	3.18	1.06	4.24
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	64	22	21.84	15.60	12.48	4.68	—
Nashville	87,784	41	21	24.40	12.20	19.52	2.44	2.44
Charleston	65,165	33	12	18.18	9.09	9.09	6.06	—
Worcester	108,240	28	12	17.85	3.57	14.28	—	—
Fall River	95,919	48	29	31.20	12.48	29.12	2.08	—
Cambridge	89,794	25	5	20.00	12.00	12.00	—	—
Lowell	88,641	35	22	40.32	1.15	34.56	—	—
Lynn	68,763	23	8	26.10	8.70	17.40	8.70	—
New Bedford	68,340	17	9	35.28	11.76	29.40	5.88	—
Somerville	68,101	14	6	21.42	7.14	21.42	—	—
Lawrence	57,263	23	11	34.80	4.15	30.75	—	—
Springfield	56,501	20	11	45.00	5.00	25.00	—	15.00
Holyoke	43,424	16	10	37.50	6.25	6.25	12.50	—
Brockton	37,278	9	1	11.11	33.33	—	11.11	—
Salem	36,883	11	6	36.36	27.27	36.36	—	—
Malden	34,613	11	7	—	—	—	—	—
Chelsea	33,468	4	2	50.00	—	25.00	25.00	—
Haverhill	32,022	11	3	18.18	18.18	18.18	—	—
Gloucester	30,589	6	4	16.66	16.66	—	16.66	—
Newton	29,716	10	4	10.00	10.00	10.00	—	—
Fitchburg	29,439	5	2	20.00	20.00	20.00	—	—
Taunton	28,167	5	3	20.00	—	20.00	—	—
Everett	25,338	5	2	—	—	—	—	—
Quincy	23,549	8	3	60.60	—	25.00	12.50	25.50
Pittsfield	22,643	3	—	—	—	—	—	—
Waltham	22,296	3	—	—	66.66	—	—	—
North Adams	20,971	2	2	50.00	—	50.00	—	—
Chicopee	17,842	10	5	20.00	20.00	20.00	—	—
Medford	16,511	2	1	50.00	—	50.00	—	—
Newburyport	14,915	—	—	—	—	—	—	—
Melrose	14,682	5	—	20.00	—	—	20.00	—

Deaths reported 2,485; under five years of age 1,025; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 441, consumption 266, acute lung diseases 184, diarrheal diseases 263, diphtheria and croup 62, typhoid fever 61, whooping-cough 25, cerebro-spinal meningitis 10, scarlet fever 9, measles 7, erysipelas 4.

From whooping-cough New York 10, Philadelphia 5, Boston 3, Providence, Charleston, Nashville, Cambridge, Lowell, Lawrence and Holyoke 1 each. From cerebro-spinal meningitis New

York 3, Cincinnati and Holyoke 2 each, Philadelphia, Boston and Springfield 1 each. From scarlet fever New York 4, Philadelphia and Boston 2 each, Lowell 1. From measles New York 6, Providence 1. From erysipelas New York 2 Philadelphia and Providence 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 9th, the death-rate was 25.2. Deaths reported 5,511; acute diseases of the respiratory organs (London) 170, diarrhœa 1,290, measles 73, diphtheria 68, whooping-cough 68, fever 61, scarlet fever 27, small-pox (Hull) 1.

The death-rates ranged from 18.1 in Leeds to 43.8 in Burnley; Birmingham 28.9, Bradford 23.8, Croydon 18.4, Derby 26.5, Gateshead 21.5, Hull 27.2, Liverpool 32.2, London 22.2, Manchester 32.8, Newcastle-on-Tyne 35.8, Nottingham 27.4, Portsmouth 21.3, Sunderland 31.9, West Ham 22.2.

METEOROLOGICAL RECORD

For the week ending September 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...10	30.30	58	65	51	58	84	71	N.	E.	7	5	C.	C.	
M..11	30.04	58	63	53	71	92	82	E.	S.E.	12	18	O.	R.	
T...12	29.70	60	63	56	92	92	92	N.	S.	11	12	O.	C.	.24
W..13	29.84	61	74	54	63	66	64	W.	N.W.	8	15	C.	C.	
T...14	30.14	54	63	46	60	58	59	W.	W.	9	12	C.	C.	
F...15	30.33	54	65	44	57	40	48	W.	N.W.	9	6	C.	C.	
S...16	30.46	52	60	45	63	71	67	N.	S.	5	8	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING SEPTEMBER 23, 1899.

M. H. CRAWFORD, surgeon, detached from the Marine Recruiting Rendezvous, Chicago, Ill., and ordered to the Marine Recruiting Rendezvous, New York, N. Y.

E. S. BOGERT, passed assistant surgeon, detached from the Marine Recruiting Rendezvous, New York, N. Y., and ordered home and to wait orders; directed to be ready for orders to sea duty.

J. M. MOORE, passed assistant surgeon, detached from the "Vermont" and to the Marine Recruiting Rendezvous, Chicago, Ill.

M. S. ELLIOTT, assistant surgeon, detached from the Marine Recruiting Rendezvous, New York, N. Y., and ordered to the "Vermont."

W. M. GARTON, assistant surgeon, detached from the "Franklin" and ordered to the Washington Navy Yard.

P. A. LOVERING, surgeon, ordered to duty at the Recruiting Rendezvous, Buffalo, N. Y.

W. F. ARNOLD, passed assistant surgeon, ordered to the Pensacola Navy Yard.

H. N. T. HARRIS, passed assistant surgeon, detached from the Pensacola Navy Yard and ordered home and to wait orders.

J. S. CHAFFEE, assistant surgeon, resignation accepted.

J. R. TRYON, medical director, detached from duty as general inspector of naval hospitals and ordered home and to wait orders.

E. C. PARKER, assistant surgeon, detached from the "Pensacola" and ordered to the "Hartford."

J. R. TRYON, medical director, retired September 24th.

L. L. VON WEDEKIND, passed assistant surgeon, granted sick leave for three months when discharged from Naval Hospital, Mare Island, Cal.

GEORGE H. BARBER, passed assistant surgeon, detached from the "Monongahela," on arrival at Newport, and ordered to duty at Naval Academy, September 30th.

GEORGE ROTHGANGER, passed assistant surgeon, ordered to duty at the U. S. Naval Hospital, New York.

M. V. STONE, assistant surgeon, detached from the "Brutus" and ordered to the Asiatic Station.

L. B. BALDWIN, surgeon, placed on the retired list.

R. S. BLAKEMAN, assistant surgeon, ordered to the Naval Hospital, Newport, R. I., on completion of preliminary examination for promotion.

J. J. SNYDER, assistant surgeon, detached from the Naval Hospital, Newport, R. I., and ordered home to be ready for further orders.

P. A. LOVERING, surgeon, detached from the Recruiting Rendezvous, Buffalo, N. Y., and ordered to proceed home as directed in orders of 12th.

E. H. MARSTELLER, detached from the Recruiting Rendezvous, Buffalo, N. Y., and ordered to duty on the "Richmond."

G. P. LUMSDEN, surgeon, detached from the "Richmond" and ordered to the Recruiting Rendezvous, Buffalo, N. Y.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING SEPTEMBER 21, 1899.

CARTER, H. R., surgeon. To proceed to Key West, Fla., for special temporary duty. September 1, 1899. To proceed from Key West, Fla., to New Orleans, La., and assume charge of service matters. September 11, 1899.

MAGRUDER, G. M., surgeon. To proceed to New Orleans, La., for special temporary duty. September 4, 1899.

PERRY, T. B., passed assistant surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Stapleton, N. Y., and report to the commanding officer for duty and assignment to quarters. September 11, 1899.

EAGER, J. M., passed assistant surgeon. To proceed to Saginaw, Mich., as inspector. September 12, 1899.

ROSENAU, M. J., passed assistant surgeon. Detailed as temporary quarantine officer at Havana, Cuba. September 13, 1899.

NYDEGGER, J. A., passed assistant surgeon. Relieved from duty at Marine Hospital, New Orleans, La., and directed to report to Surgeon MAGRUDER for special temporary duty. September 11, 1899.

BLUE, RUPERT, passed assistant surgeon. Granted leave of absence for one month and eight days from October 6, 1899. September 14, 1899.

MCMULLEN, J., assistant surgeon. To proceed to Memphis, Tenn., for special temporary duty. September 13, 1899.

VON ECDORF, R. H., assistant surgeon. Relieved from duty at Hampton, Va., and directed to rejoin station at New Orleans, La. September 11, 1899.

ADAMS, F. B., acting assistant surgeon. Granted leave of absence for ten days. September 11, 1899.

BANKS, C. E., surgeon. Granted leave of absence for one day. September 15, 1899.

PECKHAM, C. T., surgeon. To proceed to Eagle Pass and Laredo, Tex., as inspector. September 20, 1899.

MCINTOSH, W. P., surgeon. To proceed immediately to Meridian, Miss., and report by wire to Surgeon H. R. CARTER at New Orleans for special temporary duty. September 18, 1898.

WERTENBAKER, C. P., passed assistant surgeon. Leave of absence extended sixteen days on account of sickness. September 20, 1899.

FRICKS, L. D., assistant surgeon. Directed to assume temporary charge of the Service at Key West, Fla., relieving Assistant Surgeon MCADAM. September 20, 1899.

MCADAM, W. R., asistant surgeon. Relieved temporarily from the hospital at Key West and detailed for special duty in connection with the yellow-fever epidemic at Key West. September 19, 1899.

HALLETT, E. B., acting assistant surgeon. Granted leave of absence for one day. September 16, 1899.

DAVIS, H. E., hospital steward. Upon the arrival of Steward WARHANIK, to rejoin station at Boston, Mass. September 18, 1899.

WARHANIK, C. T., hospital steward. Relieved from duty at Chicago, Ill., and directed to proceed immediately to Baltimore, Md., for temporary duty and assignment to quarters. September 18, 1896.

APPOINTMENT.

WOOLGAR, W. J. W., of Ohio, to be acting assistant surgeon for duty at Cleveland, O. September 8, 1899.

SOCIETY NOTICE.

MASSACHUSETTS MEDICO-LEGAL SOCIETY. — The fall meeting will be held at the Medical Library, 19 Boylston Place, Boston, on Wednesday, October 4th, at 12 M.

The following papers will be read. Herbert Parker, Esq.: "Some Notes from Old Trial Calendars."

Dr. Jay Perkins: "Medical Testimony on Insanity as an Excuse for Crime."

Prof. Charles Harrington: "Food Poisons and Metallic Irritants; Resemblances and Differences Observed."

Members of the medical profession are cordially invited.

JULIAN A. MEAD, M.D., *Secretary*.

Original Articles.

THE TREATMENT OF CEREBRAL TUMORS.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

The frequency with which cases of cerebral tumor occur is still a matter of some question. Out of 114,802 cases admitted to the Boston City Hospital in the last twenty years the diagnosis of cerebral tumor was made 82 times; while in 276,573 cases treated in the out-patient department in the same period (of whom 8,511 were treated in the department for nervous diseases) the diagnosis was made in only 24 cases. At this hospital, of course, cases of acute disease predominate, but, nevertheless, these figures are very much below those given by Starr,[2] who found the diagnosis of brain tumor made in 80 out of 16,361 cases, or by Bramwell,[3] who found the diagnosis made in 82 out of 10,512 cases. On the other hand, if we turn to the autopsy records, where all slight and curable affections are of course excluded, the frequency seems much greater. A new growth was found in 73 out of 3,650 autopsies at the Boston City Hospital and in 305 out of 26,030 collected autopsies, a trifle over one per cent., as the following table shows:

TABLE I.

BRAIN TUMORS FOUND AT AUTOPSIES.

Boston City Hospital	73 in	3,650
Beadle's Insane Asylum[2]	45 in	4,000
Presbyterian Hospital, New York[3]	7 in	745
New York Hospital[3]	30 in	2,970
Beck[3]	50 in	5,170
Seydel[4]	100 in	8,488
Total	305 in	26,030

The cures, real and alleged, accomplished by surgical interference in such cases and the emphasis laid upon the tendency, without surgical interference, for the patient to grow worse and die after a period of protracted suffering have rendered any consideration of medical treatment uninteresting and almost superfluous. Nevertheless medical treatment has its place. Although most cases which present sufficient symptoms to warrant the diagnosis do grow steadily worse, some cases lead a fairly comfortable existence for a number of years and others cease wholly to suffer except from some residual symptoms, such as postneuritic atrophy. In such cases it may be that the growth has become encapsulated and calcareous, as we sometimes see at the autopsy. We not infrequently find cases at the autopsy in which a tumor of considerable size has caused during life no symptoms, as in six out of 40 cases which I reported some years ago.[5] How frequently, with definite symptoms of a new growth, patients lead a comfortable existence or cease to suffer it would not be easy to say, but most neurologists can recall several such cases in their own experience. Bramwell[6] has recently given the statistics in his own personal experience in 122 cases. Of these, 76 resulted fatally; 11 were apparently cured; 11 greatly relieved; 13 remained *in statu quo*, and the result in 11 cases was unknown. Four of the cases which were apparently cured and one of those which was greatly relieved were non-syphilitic cases, and Bramwell suggests that these were cases of distended ventricle and not of tumor. Be that as it may, cases presenting all the symptoms of tumor may live with comparatively slight discomfort for a period, as in a case under my own observation, of fourteen and a half years, or as, in a case reported by Seguin,[7] of over eighteen years. Furthermore, nine cases out of ten are not amenable to surgical treatment except as a palliative measure for the relief of pain, so that, unless we are ready to do nothing at all to help the patient, some medical treatment becomes necessary.

That the symptoms due to syphilitic growths may wholly disappear after the exhibition of antisyphilitic remedies is so often impressed upon us that we are sometimes led to give too favorable a prognosis in all cases of cerebral syphilis. The symptoms may also be considerably ameliorated by such remedies, not only in tubercle of the brain, which, pathologically, has a certain kinship with gumma, but even in glioma and other growths. This fact is recognized by many trustworthy observers; the reason is still obscure. The lesson, however, is obvious, that whether syphilis be suspected or not, it is worth while to try the effect of large doses of iodide of potassium and of mercury, pushing the doses of each to the limit of toleration. In cases of suspected tubercle cod-liver oil, arsenic and iodide of iron may also be of benefit, but rather as adjuvants to mercury and the iodide of potassium than as substitutes for them.

The length of time that these remedies should be given depends upon the behavior of the patient under treatment. So long as steady improvement is observed the treatment should be continued, gradually diminishing the amount of the dose or occasionally omitting the drugs for a time if the condition warrant it. In cases where there is no noticeable gain the question how soon to abandon the hope of benefit from drugs and resort to operation becomes important. Horsley sets six weeks as the limit in cases of suspected gumma and two months in cases of suspected tubercle, and these limits should be regarded as extreme. At the end of a month, if there be no improvement, and sooner if the patient be rapidly growing worse, operation should be considered. Even in cases that are apparently progressing favorably we must bear in mind the possibility of a sudden change for the worse, — the onset of convulsions or coma with a fatal termination, — be guarded in our prognosis and be ready for prompt surgical interference.

When an operation is contraindicated or is rejected by the patient, considerable may be done in the way of palliative treatment. Convulsions may often be benefited by the bromides and a regimen like that of epilepsy. Headache may be wholly relieved, or at least made tolerable, by the various coal-tar derivatives, which are often well borne. One of my patients took nearly 20,000 grains of phenacetine in a year without bad results and with considerable relief from the headache, and another took about the same amount of antipyrin in the same time. In a third case, however, very marked cyanosis followed the use of a few doses of some proprietary headache powder, so

[1] Read before the Section of Neurology of the American Medical Association at Denver, June, 1898, and before the Surgical Section of the Suffolk District Medical Society, November 3, 1898.

[2] British Medical Journal, October 16, 1897.

[3] Edinburgh Medical Journal, June, 1894.

[4] Verhandlungen d. deut. Gesellsch. f. Chir., 1892.

[5] Pathology, Diagnosis and Treatment of Intracranial Growths, 1891.

[6] Brain, xxii, 1, Spring, 1899.

[7] Journal of Nervous and Mental Diseases, April 1887.

that such remedies should not be given without careful supervision.

I need not speak of other indications for symptomatic or palliative treatment. As I have already said, medical treatment is too important to be ignored. It affords more hope of relief than is often believed, and by its aid the patient may have a comfortable existence for several years or even a cessation of all his symptoms.

I do not mean, however, to slight the fact that in many cases, in spite of our best efforts, the patient steadily grows worse until death ends his sufferings. It is the rule in the majority of cases that present sufficient symptoms to warrant the diagnosis. Therefore Godlee's famous operation in 1884, followed by Horsley's brilliant successes, aroused the widest interest in the new treatment of cerebral tumor, foreshadowed by Wernicke in 1881 — extirpation by surgical means. The earliest operations were almost wholly English and American, but later the zeal for operating spread to other countries, so that cases have been recorded all over the world. I have for the third time [8] collected the reported cases — a task which has become so great that it is doubtful whether any one in the future will undertake to do more than add a few additional cases to these. To the 72 cases collected in 1891 I have added 442 others — a number sufficient to warrant fairly definite conclusions. At the last meeting of the British Medical Association, Ferrier [9] reported statistics based upon 38 cases operated upon at the National Hospital for the Paralyzed and Epileptic in London. These would give a grand total of 552 cases, but as a few of Ferrier's cases have probably already been reported and considered in my collection before I received his paper, this total is somewhat too great. Some of the other cases, notably those mentioned at the same meeting by Beevor and Waterhouse,[10] may also have been reported previously. Ferrier's cases I have considered by themselves. On the other hand, various articles have proved inaccessible, so that the total number of reported cases must now probably considerably exceed 600.

The benefits of such operative interference seem to be still somewhat in dispute. H. C. Wood [11] stands at one extreme when he states that "cerebral surgery as practised by various surgeons has been very valuable to neurology by affording early post-mortems in cases which otherwise might after some months have drifted away from medical watching." Starr's [12] hope still triumphs over experience when he says that "I cannot but believe that the operation for tumor of the brain will be more widely performed in the future, that cases will be operated upon earlier in the disease as our knowledge of diagnosis increases, and that the day will come when as little fear will be felt in opening the cranial cavity as is at present felt in the opening of the abdomen." And I believe that the statistics at present available, which would seem to indicate that but three per cent. of brain tumors can be successfully removed, will be materially changed within the next ten years." Chipault,[13] however, stands at the extreme of optimism when he states that "in the very near future every intracranial tumor will be considered, when the diagnosis is made, as warranting surgical treatment, and, taking into account deaths from the operation whose number will certainly be reduced by the methodical and prudent technique we have indicated, this treatment will cure by a radical intervention seven per cent., and, by palliative intervention, which may be repeated two or three times on the same patient, will relieve at least 60 per cent. of intracranial tumors.

Statistics are well recognized as fallacious, and Bruns,[14] regarding Starr's percentages as too favorable, argues that it is wiser to draw our conclusions as to the indications for and prognosis of surgical treatment, and as to the general results from a carefully selected series of cases than from the whole mass of collected cases, and Oppenheim [15] emphasizes the criticism which I raised eight years ago in regard to the percentages of recovery, that many cases are reported too soon for us to determine what the real result is, and that others are reported too imperfectly for us to draw definite conclusions. In a personal note Mr. Horsley has made another criticism on the collected statistics that in many cases the operation is not done early and that the risks are increased by trying to do the whole operation in one sitting, instead of in two stages, as he has repeatedly advised. It is, however, a difficult matter to determine the principle on which a selection of cases should be made. To select only cases reported by a few well-known men would make an invidious distinction, and, as the tables will show, it might not be much more satisfactory, for well-known men have failed; to select only the cases which were not reported until time enough had elapsed for definite conclusions to be drawn would be misleading, since all the fatal and only a part of the successful cases would thus be included. Fortunately the recent article by Ferrier affords a standard of selected cases for comparison. These 38 cases under the observation of the leading neurologists of London and operated upon under the most favorable conditions of skill and technique by Horsley or Ballance may fairly be compared with the aggregate of cases collected.

In considering the question of surgical interference it may be well first to consider once more what percentage of cases may fairly be considered as operable, and then, from the statistics, to draw conclusions as to the chances first of diagnostic and second of operative success. Under the latter heading we must consider also the chances of success according to the situation and according to the nature of the growth. In the event of a failure in diagnosis we must also consider whether harm or good has been done by operation.

The percentage of operable cases has not been materially altered by more recent statistics. In 1891 I gave the percentage as in the neighborhood of eight. Further statistics show that the proportion remains about the same. In 73 autopsies at the Boston City Hospital, part of which were reported in 1891, it seemed possible to remove the growth in twenty, but in only six cases were there symptoms enough to warrant a local diagnosis and in only three cases was an operation actually performed. Out of 1,745 autopsies collected in the following table, an operation was thought possible in 152 — 8.7 per cent. —

[8] Boston Medical and Surgical Journal, April, 1890. Pathology, Diagnosis and Treatment of Intracranial Growths, 1891.
[9] British Medical Journal, October 1, 1898.
[10] British Medical Journal, August 6, 1898.
[11] Wood and Fitz: Practice of Medicine, p. 528.
[12] Dercum: Text-book of Nervous Diseases, p. 505.
[13] Travaux de Neurologie Chirurgicale, p. 167.
[14] Die Geschwülste des Nervensystems, p. 216.
[15] Die Geschwülste des Gehirns, Nothnagel's Spec. Path. u. Ther., ix, p. 239.

but these totals are not wholly to be depended upon, as many of the cases undoubtedly figure in more than one of the collections.

TABLE II.

OPERABLE CASES (AUTOPSIES).

Boston City Hospital	6 in	75
Hale White [15]	10 in	100
Mills and Lloyd [16]	10 in	100
Starr (children) [16]	16 in	300
Starr (adults) [16]	21 in	300
Bernhardt [16]	53 in	485
Gray [16]	10 in	102
Dana [16]	5 in	29
Beck [16]	8 in	50
Bruns [16]	3 in	33
Seydel [17]	3 in	100
Oppenheim [18]	1 in	23
Bramwell [19]	6 in	50
Total	152 in	1,715

If we judge simply by clinical cases without autopsies, the percentages are larger, because the chances of error are admitted. In 60 cases of which I have clinical records a local diagnosis admitting an operation was made in 18, but an operation was actually advised in only 9 and performed in 5. Starr [16] regarded 18 cases in 80 operable, 15 of which were actually operated upon. Bruns [20] made a probable local diagnosis in 61 out of 76 cases, but a definite diagnosis in only 51. Of these 15 were operable and 7 were actually operated on. Bramwell,[21] on the other hand, found only 5 cases in 123 operable. Thus 56 cases in 339 seemed operable — 16.5 per cent.

TABLE III.

OPERABLE CASES (CLINICAL).

Knapp	18 in	60
Starr	18 in	80
Bruns	15 in	76
Bramwell	5 in	123
Total	56 in	339

This reference to the chances of error in diagnosis leads naturally to a consideration of the question of the chances of diagnostic success. It is not enough to ask, when we are estimating the chances of success in the individual case, what are the chances of recovery if the tumor be removed. We must also take into account the chances of error in the diagnosis and the possibility of removing the tumor if the diagnosis be correct. Of course here the personal equation is a large factor; much depends upon the skill of the neurologist who is called upon for a diagnosis, but a study of the collected cases will show that even the best neurologists are not free from error.

Under the general heading of failure to remove a tumor, we must consider three classes of cases: (1) Where the tumor existed at the point operated on, but where from its extent, from the fact that it could not be distinguished from the surrounding healthy brain substance, or from the patient's condition, it could not be removed; (2) the cases where there was a mistake in diagnosis, the tumor not being at the point operated on or there being no tumor at all, and (3) the cases where the focal symptoms were indefinite and an operation was undertaken merely as a palliative measure. It is not easy to classify the individual case, especially if the original report be not at hand, so that my tables must be regarded as only approximately correct. When a tumor is not found at the operation it is more soothing to say that the operation was done merely to relieve pressure, but some of these operations have been so clearly palliative (a correct diagnosis of an inoperable tumor being made), that strictly speaking they should be disregarded if we consider only *bona fide* attempts to remove a tumor.

If we study the reported cases we will find that the increase in our diagnostic skill which Starr hopes has not as yet followed. Godlee's operation came fourteen years after the publication of the researches of Fritsch and Hitzig in 1870 — the first contribution to the study of the localization of functions in the cerebral cortex which made the surgical treatment of cerebral tumors possible. In 1884 our knowledge of the functions of the cerebral cortex enabled us to localize the centres for motion, smell, sight, hearing and speech. In spite of the study that in the period of fifteen years since 1884 has been made of cerebral functions and the symptomatology of cerebral tumors, we have gained only a more exact and detailed knowledge of the areas we knew in 1884; the functions of the other parts of the cortex are still obscure. The results of operations show no increase in diagnostic skill. In the cases I collected in 1891 there were 26 failures to remove the tumor in 72 operations (36.1 per cent.), of which 15 (20.8 per cent.) were due to errors in diagnosis. In removals attempted since there have been 198 failures (44.7 per cent.), of which 96 (21.7 per cent.) at least were due to errors in diagnosis. Of course a certain number of incompetent men have attempted to make a diagnosis, especially as the interest in the operation has extended, but not all the failures can be ascribed to incompetence. Even in the 38 cases reported by Ferrier, we find 18 failures to remove (47.3 per cent.), but he

TABLE IV.

REMOVALS AND FAILURES TO REMOVE TUMORS, 1884-1891 AND 1891-1899.

Removals and failures, 1884-1891.	Cases.	Per c.	Total failures. Cases.	Per c.
Removed	46	63.8		
Impossible to remove. Failure	4	5.5		
Growth not found. Failure	15	20.8	26	36.1
Palliative. Failure	7	9.7		
Total	72			

Removals and failures, 1891-1899.	Cases.	Per c.	Total failures. Cases.	Per c.
Removed	244	55.3		
Impossible to remove. Failure	41	9.2		
Growth not found. Failure	96	21.7	198	44.7
Palliative. Failure	61	13.8		
	442			

Ferrier's cases.	Cases.	Per c.
Removed	20	52.7
Failed	18	44.3
	38	

[15] British Med. Journal, October 16, 1897.
[16] Verhand. d. deut. Gesellsch. f. Chir., 1892.
[17] Die Geschwülste des Gehirns, p. 246.
[18] Edinburgh Med. Jour., June, 1894
[19] Die Geschwülste des Nervensystems, p. 220.
[20] British Med. Jour., August 6, 1898.

does not state in how many of these cases the tumor was found and could not be removed, or how many operations were simply palliative (Table IV).

It may fairly be said, however, that increased skill in surgical technique has given a diminished mortality. Thirty-one of the 72 cases operated on between 1884 and 1891 died as a direct result of the operation, a mortality of 43 per cent., 148 out of 442 subsequent cases in which the result is known proved directly fatal, a mortality of 33.4 per cent. This gain seems due to the improved technique rather than to any more careful selection of cases, of which I can find no indication in the collected reports. Ferrier's cases strengthen this belief, for in these, where the technique must be regarded as the best attainable, only seven died as a direct result of the operation — an immediate mortality of only 18 per cent. (Table V).

Coming now to the question of operation in a case

TABLE V.

Result of Operations.

Cases 1884-1891.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Removed	21	4	2	3	..	1	15	46
Impossible to remove.	..	1	..	..	..	..	3	4
Growth not found	..	..	..	2	..	..	13	15
Palliative	..	6	..	1	..	..	..	7
Total	21	11	2	6	0	1	31	72
Cases 1891-1899:								
Removed	49	68	6	34	6	14	67	244
Impossible to remove.	..	5	..	4	4	2	26	41
Growth not found	4	10	..	27	9	1	45	96
Palliative	..	29	..	14	4	4	10	61
Total	53	112	6	79	23	21	148	442
All cases, 1884-1899, except Ferrier's:								
Removed	70	72	8	37	6	15	82	290
Impossible to remove.	..	6	..	4	4	2	29	45
Growth not found	4	10	..	29	9	2	58	111
Palliative	..	35	..	15	4	4	10	68
Total	74	123	8	85	23	23	179	514
Ferrier's cases:								
Removed	6	..	..	8	..	3	3	20
Failed to remove.	..	3	..	8	..	3	4	18
Total	6	3	..	16	..	6	7	38

of brain tumor, let us once again consider what the chances are of benefiting the patient. I have collected 514 cases, excluding the 38 reported by Ferrier, a very large proportion of those on record. Of these I have classified 68 (13.2 per cent.) as palliative operations, some of which may more properly be regarded, perhaps, as cases of mistaken diagnosis. In 45 cases (8.7 or 10 per cent., according as we include or exclude these palliative operations from the total number) the growth existed at the point of operation but it could not be removed. In 111 cases (21.5 or 24.8 per cent.) it was not found. In 290 cases (56.4 or 65 per cent.) it was found and removed, but in at least 57 of these cases (11 or 12.7 per cent.) the growth was of such a character that it could not be wholly removed. We see, therefore, that in only about one-half of the cases operated upon has it been possible, with our present knowledge and skill in technique, wholly to remove the growth. Assuming that 16 per cent. of all cases seem operable we can therefore hope to find and wholly to remove the growth in about 8 per cent., the same proportion that autopsy records show as operable.

Granting, however, that the growth be found at the point selected for operation, and that it can be wholly removed, what are the chances for the patient's recovery? In the statistics previously collected by me in 1890 and 1891, it seemed at that time that the chief question to determine was the fatality of the operation itself. Many of the cases were reported very soon after the operation and little was said as to the later history. Nevertheless at that time I showed that the percentage of success (30 cases in 46, nearly 66 per cent.) was too favorable because, in some instances, the growth had recurred later with fatal consequences. Later statistics emphasize this danger. Out of 209 removals 82 died as the direct result of the operation, 37 died subsequently with symptoms of the recurrence of the growth, 8 others showed symptoms of recurrence but were still living. In most of these last 45 cases, however, the operation caused temporary relief. In 15 cases there is no record of the result and in 6 cases there was no improvement. In 142 cases the patient recovered from the operation, either completely or with considerable improvement. In 72 cases, at least, although some of the more distressing symptoms were relieved and the fatal progress of the disease was checked, the recovery was incomplete. Blindness from post-neuritic atrophy, epilepsy, paresis or complete spastic hemiplegia, remained as the result of the destruction caused by the tumor or by the surgical measures for its removal. Even in the 70 cases that are classed as recovered, the records are often too imperfect to enable us to say definitely whether the recovery was complete. A very few cases have been examined some years after the operation and have been found to be practically well. Such proof of complete recovery is exceptional and we must regard the alleged cures with much suspicion. Ferrier, in his statistics last year, wisely refrained from giving too definite statements as to recovery. In 16 cases in which a tumor was removed from the cerebrum 2 died, 6 lived from one to ten months, and 6 lived over a year.[22] In 4 cases in which a tumor was removed from the cerebellum 1 died, 1 lived from one to ten months, and 1 lived over a year. In the other cases the result was unknown. Viewing these statistics in the most favorable light, we are forced to conclude that, while we may expect to be able wholly to re-

TABLE VI.

Partial Removals (Included in Tables V and VIII).

Location.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Prefrontal							1	1
Central		11	5	14	2	1	12	45
Parietal		1					1	2
Temporal				3		1	1	5
Cerebellar		1		1			2	4
Total		13	5	18	2	2	17	57

[22] These I have classed as recovered for the sake of comparison

move the growth in about one-half of the cases which seem operable (that is, in about 8 per cent. of all the cases) over one-fourth of these cases will die as the direct result of the operation and less than one-fourth will make a complete recovery. Of the rest a portion will succumb later to a recurrence of the growth, the rest will linger for a few years blind, epileptic, or paralyzed — a result far below Chipault's sanguine predictions; a result perhaps not much better than may be attained by purely medical treatment.

Shall we then cease to operate in cases of brain tumor? It would be going too far to say yes. There is the hope, faint though it be, that the operation may result in a complete cure. Failing that, it may give relief from pain, prevent blindness and prolong life, even if the patient remain epileptic or paralyzed. Even if the growth be partly removed, or if it recur, it may be operated on two, three, four, or even eight times with some relief.[20] Even temporary relief justifies the operation, and many patients would prefer life and comfort with paralysis to suffering and speedy death. It is still permissible to operate in cases of brain tumor, but we must be guarded in our predictions and we must not lead our patients to expect too much from the operation.

[20] Thirty-five cases in Table VIII were operated on more than once.

Where the growth cannot be wholly removed the prognosis, of course, is worse. In most of these cases the growth is of an infiltrating character, either glioma or sarcoma. Out of 57 such cases 17 died as the result of the operation, and 18 died later from a recurrence of the growth. In 5 cases more the growth recurred after a period of temporary improvement, in 2 there was no improvement, in 2 the result is not stated, and in the other 13 the condition was reported as improved (Table VI).

If the growth cannot be removed at all, it may be due to several causes. Either the patient's condition becomes so bad that the operation cannot be continued, in which case, of course, a fatal result is very probable, or the growth is so extensive that it cannot be removed, or is so infiltrated that it can hardly be distinguished from the normal brain, or else so small, or of a consistency so like that of the normal brain that it cannot be detected. In all these cases the risks are obviously very much greater. Out of 45 cases 29 died as a direct result of the operation, 4 were not benefited, 4 improved for a time and then died, in 2 the result was not stated, and only 6 were reported as relieved, the operation being practically a palliative one (Table VII).

(To be continued.)

TABLE VII.[20]

FORTY-FIVE CASES WHERE IT WAS IMPOSSIBLE TO REMOVE THE TUMOR (INCLUDED IN TABLE V).

	Improved.	Improved. Died later.	Not improved.	Not stated.	Died.	Cause of failure.
Previously collected. Pathology, diagnosis and treatment of intracranial growths	1				3	
Aldibert. Revue de Chir., p. 155, 1895			1			
Beck. In Auvray, op. cit., p. 360					1	Impossible to remove.
" " " 361					1	Multiple.
3 " " " 359		1				Collapse.
Bruns. Op. cit., p. 226				1		Infiltrated.
Carson. Annals of Surgery, xxviii, 328					1	Impossible to remove.
Chipault. Gaz. des Hôpitaux, lxxi, 537, 1898	1					Hemorrhage.
Chipault and A. Chipault. Rev. Neurol., April 15, 1899					1	Indistinguishable, infiltrating.
Clegg. Liverpool Medical-Chirurgical Journal, xii, 244, 1892	1					Collapse.
Collins. Transactions of the American Neurological Association, 1895				1		
Conroy. New York Medical Journal, ii, 537, 1893					1	Too large.
Dinkler. Neurol. Centralblatt, xvi, 611, 1897					1	Too deep-seated.
Eskridge. Journal of American Medical Association, September 30, 1893.					1	
Eskridge. Denver Medical Times, June, 1896					1	Too large.
Fisher. New York Medical Journal, April 16, 1898.					1	Too large.
Gordinier. American Journal of Medical Sciences, May, 1899					1	Indistinguishable, collapse.
Gray. Op. cit., second edition, p. 336					4	Impossible.
Hermanides. Operative behandeling van hersengezwellen, 1894	1					Too deep-seated.
Hermanides. " " " " "	1					Impossible.
King. Chicago Clinical Review, April, 1897					1	Infiltrating.
Knapp. Unpublished					1	Infiltrating, collapse.
Krauss. New York Medical Journal, July 20, 1898			1			Too deep-seated.
Lauphear. Journal of the American Medical Association, April 27, 1895					1	Hemorrhage.
2 Levett and Ballard. Unpublished			1			Too deep-seated, hemorrhage.
McBurney and Starr. American Journal of Medical Sciences, April, 1893.					1	Too large.
Nicholson. British Medical Journal, ii, 1367, 1893		1				Too large.
Rose. Medical Press and Circular, i, 175, 1894	1					Impossible.
Rossolimo. Arch. f. Psych., xxix, 538, 1897					1	Hemorrhage.
Schultze. Deutsche Zeitschr. f. Nervenheilk., ix, 217, 1896					1	Indistinguishable.
Sonnenburg. Berlin. klin. Wochenschr., p. 909, 1894					1	Collapse.
Starr. Medical Record, i, 145, 1896					1	Infiltrating, hemorrhage.
Starr. British Medical Journal, October 16, 1897			1			Hemorrhage.
Stieglitz. Transactions of the American Neurological Association, 1895					1	Impossible.
Stieglitz. " " " " "					1	Hemorrhage.
Taylor. Transactions of the Ophthalmic Society, London, xiv, 105, 1894		1				Infiltrating.
Taylor. " " " " " "		1				Infiltrating.
Taylor and Elliot. Boston Medical and Surgical Journal, 1896					1	
Winkler. Bijdrage tot de Hersen Chirurgie					1	Infiltrating, collapse.

[20] In the preparation of these tables I have been obliged to rely in part upon the collections made by Chipault (Chirurgie Opératoire du Système Nerveux and Travaux de Neurologie Chirurgicale) and Broca and Maubrac (Traité de Chirurgie Cérébrale.) Many other articles were accessible only in abstracts in the Neurologisches Centralblatt, Revue Neurologique, etc. In this way errors may have crept in and desirable data may have been omitted. I am indebted to various of my colleagues for permission to include unpublished cases. In cases marked with a +, the growth was not entirely removed. The number preceding some of the references indicates that several operations were done on the case; in such cases the result is based on the final operation.

SCHOOL SEATS.[1]

BY E. H. BRADFORD, M.D., AND J. S. STONE, M.D., BOSTON.

As it is often asserted that school chairs furnish one of the influential factors in the development of lateral curvature, a careful study of the proper form of school chair deserves and has received much attention. The results, however, are neither as satisfactory nor conclusive as is desirable, as the seats supplied in our schools are not always suitable.

The movement for reform in school furniture may be said to have begun with the publication in 1841 by Barnard, of Hartford, of his classic work on school architecture. Preceding this publication there had been, however, considerable discussion of the subject. About ten years earlier in Boston Dr. John C. Warren and Dr. Alcott, and in New York Mr. William J. Adams, had begun to advocate the use of sloping desks of proper heights, the separation of the seats from the



Faulty attitude in sitting.

desks behind, and the use of individual seats with backs.

The use of seat backs began about fifty or sixty years ago. Then followed the introduction of separate seats and later, at about 1850, the separate desks and chairs were first used. Attention had also been directed to the horizontal "distance" between the back of the desk and the front of the seat. Although a "minus" distance in which the desk overhangs the seat was advocated by some, yet Barnard and Alcott believed in a zero distance, which was, however, a step in advance as compared with the former "plus" distance of several inches.

Barnard was the first to make definite measurements of children of different ages and to devise from this a scale for the height of the seat and desk. In 1863 Fahrner, of Zurich, published the first European scale. There have since been published in this country the Whitcomb and the Bobrick scales, while in Europe the Frankfort scale, published in 1885, and the scales of the Prague and Vienna Commissions, published in 1892, are the most important. Much attention has been given to the various scales according to which fixed furniture is constructed and by which adjustable furniture is fitted. Being based on different series of measurements of children of different nationalities and classes there have been considerable differences in the results. Moreover, different standards are taken as the basis from which seat height and desk height of adjustable furniture are computed, as, for example, in one scale knee height and in another total height is taken as the basis.

While the scales have served a very useful purpose in bringing about more accurate fitting, according to averages, they cannot, of course, compare for accuracy in special cases with individual measurements made, for instance, in the school measuring chair, devised by Dr. Hartwell, in which at one sitting all the required measurements are easily read off. In the use of individual measurements, particularly in weak children, and in children above or below the average of those of the same age, and in careful attention to the seating of such individuals, much good may be done, although at present the universal adoption of complete individual measurements can scarcely be expected.



Attitude commonly assumed by weak-backed children.

At the same time that so much was being done in the development of various scales there were introduced many different kinds of adjustable furniture, both desks and chairs.

The problems of desk construction are, according to Cohn, (1) to secure such a "difference" in height between the desk surface and seat that the elbow with the arm hanging naturally just reaches the desk, which brings the book at the proper distance from the eye; (2) to secure such a horizontal "distance" between the seat and the desk that the body and head may not be inclined forward too far in order that the eyes may be near enough to the desk; (3) to have a proper slope to the desk surface. For purposes of reading the ideal slope is 45, because then the eyes can be directed downward without fatigue and without bending the head forward. Such a slope, however, is not practicable for writing, and therefore, as a compromise, a slope of from one in six to one in ten has usually been adopted.

Modern construction in all adjustable desks meets the requirements of proper height. The problem is

[1] Read by title at the annual meeting of the American Orthopedic Association, 1899.

simple because there is no need of automatic change. The need for automatic change by the scholar in the horizontal distance between the desk and seat has been met in two ways, first, by movable desk tops and second, by movable seats. Of the movable desk tops there were two types. In one the surface is divided transversely so that one part may move upon the



Faulty attitude.

other, usually the posterior part folding over on top of the anterior, as in the desk devised by Parow in 1865.

There are also a great variety of mechanisms by



Faulty attitude from too low desk and stool.

which one-half of the desk top slides upon the other. Some are comparatively simple, some are rather complicated, most of them, as of the folding type, are not used because of the break in the writing surface. Some obviate this difficulty by making practically the whole of the desk surface movable, leaving only a small portion at the forward edged fixed, thus approximating the type in which the whole desk top moves. So much weight has been attached to the importance of a movable desk top by Lorenz and Cohn, among others, that much attention has been paid to perfecting the mechanisms by which the desk top as a whole is moved.

Some of the folding and some of the sliding desks meet the third requirements of desk slope by making a change at the same time that they change the distance, so that for reading there is a positive distance with an increased slope, while for writing there is a negative distance and a decreased slope. The Simplex desk of Schenck deserves particular attention. In it the "distance," the "difference," and the slope are all altered automatically by a very simple mechanism. By a simple mechanism also in the modern Chandler desk the slope and the distance may be changed together or independently as the scholar wishes. A certain amount of instruction and care is, however, neces-



Faulty attitude from too low desk and stool.

sary for the intelligent use of a desk of this sort, which is not necessary for those of the simplest construction.

Of course in the difference in height and the horizontal distance between the seat and the desk the chair must also be considered. Thus many adjustable seats have been made at the same time that the desks were improved. It is now universally recognized, in regard to the chair, that the height of the seat should equal the length of the leg from the sole of the foot to the under surface of the thigh when the feet are placed squarely upon the floor and the knee is bent to a right angle. It is generally agreed that the seat surface should slope slightly from front to back so as to counteract the tendency to slide forward, but not slope so much as materially to tilt the pelvis if the child sits sidewise in the seat. The length and breadth of the seat should correspond roughly to the dimensions of the thighs. A seat of insufficient depth can cause no particular harm. A seat of too great breadth allows, while one of too great depth compels, bad postures. The last requirement is, as stated by Hartwell, that "the seat should be provided with a back that shall

support the sitter's back whether he be quiescent or actively engaged, as in writing or drawing."

Adjustment for height is a comparatively simple matter. In some cases it is secured by adjustment of the foot rest, but now all modern seats have simple adjustments in the castings.

In order to obtain an adjustment for distance from the desk several types of seat have been made. As examples, Beyer devised one in which the seat slid on its supports. Wackenroder one in which the seat slid forward and back together with its supports, and Hippauf one in which the seat, by a parallelogram motion, could be moved forward and back upon its support like an inverted pendulum. In each of these the seat back was attached to the front of the desk just behind and therefore was available only with a "plus distance." The same was true of the seat of Wandenesch, which secured a plus and minus distance by eccentric rotation on its support.

Various folding seats, such as the "Columbus" of Ramminger, secured the change of distance merely as an aid in getting in and out of the seat. Many modern



Faulty attitude at school.

seats have fixed adjustments for distance, but in most cases where an automatic adjustment is sought for it is obtained through a movable desk top. One seat in particular, devised in Copenhagen, deserves attention because the height of the seat, the distance from the desk, the depth of the seat, and the height of the back can all be changed automatically at the same time. The supports at the two sides of this seat are split from above and in front diagonally downward and backward so that as the seat is raised up by notches it also moves nearer to the desk. The back also is drawn nearer to the desk as the seat is raised. The construction is, however, rather awkward. In some of the Bobrick chairs a similar mechanical principle is applied to the back, although the adjustments are not automatic. There have been a considerable number of seats constructed for home use which are adjustable in all their parts so that they may be used alike by small and large children, but these are all rather too awkward for school use.

The great problem of chair construction has been the back. Meyer in 1867 was among the first who carefully studied the question of seating and the mechanisms involved. In the sitting posture the weight is borne principally on the tuberosities of the ischium. When the centre of gravity, which lies in front of the tenth dorsal vertebra, is exactly over a line connecting the tuberosities the body balances without muscular effort. If, however, the body inclines forward the centre of gravity falls in front of the tuberosities and must be supported by the under surface of the thighs resting upon the front of the seat. If the body inclines backward, there must be some point of support behind the tuberosities and this is found in the coccyx. If, however, the body leans either forward or backward, then the weight must be supported by complicated muscular action unless some additional means of support is furnished. The chair back gives this in the backward position. In the forward position the body drops forward, according to Fehrner, by a series of jerks until the weight is caught by the elbows resting upon the desk. In the forward position there is a decided tendency to vicious attitudes,



Ill-fitting desk and stool.

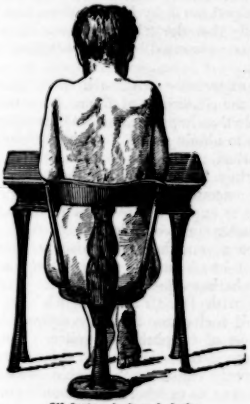
the tendency being to hang the body from the shoulders rather than let the arms hanging from the shoulders rest easily upon the desk. In the prevention of bad attitudes in the forward position the size of the chair seat, the "difference," the "distance," and the desk slope are of considerable importance as well as the chair back.

In maintaining correct attitudes in the backward position the chair back is of the utmost importance. As recognized by the Vienna Commission there are three types of seat backs. The first is the low pelvic support, the second the lumbar, the third the dorsal. These, of course, may be combined.

Meyer favored the pelvic support because by fixing the base of support for the whole spine it favored an upright position. He considered the last vertebra the most advantageous point of support. Though regarded by him as unnecessary there may be added a dorsal continuation of his back support, short and at the same time inclined very sharply backward. Cohn and Hermann agree essentially with Meyer. Meyer objected very strongly to any high straight back because it forced the child to slide forward on the seat.

Through the work of Lorenz and Schenk the reclining seat back is now generally used with an inclination averaging about ten degrees. Both of these authors advocate writing in the reclining position, Lorenz at first advocating a desk slope rather more steep than experience has shown to be practicable. Lorenz and Meyer insist much more strongly than Schenk on the necessity of having a firm lumbar support. Many seats have been constructed with a lumbar support alone, having in view as the main object the maintenance of the normal lumbar curve. One back deserving particular mention is that of Holscher, in which two supporting pads, a transverse lumbar and a perpendicular dorsal, are placed upon an upright rod, the whole inclined backward and adjustable for height.

In spite of all the work which has been done in regard to the chair backs they still remain the weakest point in even the best of the modern school furniture built in this country. It is evident that children with strong backs can get on with no support, especially if the sitting hours are properly regulated, but weak



Ill-fitting desk and chair.

muscles are not uncommon among school-children and the best possible support should be furnished. Such support is given by a chair in which faulty positions would be less comfortable than correct ones. Children require a change of position as a relief, and it is desirable that such a change be furnished without tempting the child to attitudes in which the back is less favorably supported.

If children seated, but tired of sitting, are watched, it will be noticed that they either lean upon the desk or slide down upon the chair, to take as far as possible a reclining position, to relieve the downward pressure upon the pelvis and the strain upon the lumbar ligaments and fascia, or by twisting the trunk and sitting to one side or the other, relieving one set of muscles temporarily at the expense of a strain of the others. The photographs taken by Scudder in the public schools show admirably the faulty positions assumed as a result of fatigue and improper seating. Although these positions may be assumed without harm for a short time, yet if constantly taken a habit is developed dangerous in growing children.

The danger from leaning upon the desk is minimized by a proper construction, properly adjusted height and slope of desk, which with a sufficiently narrow seat will diminish the tendency to a twisted position of the trunk, particularly if the height of the seat is properly regulated. Here also the general introduction of vertical script has been of marked benefit.

The tendency to slip down in the chair and to assume an inclined position is but imperfectly met by foot rests and by hollowing the seat so that the buttocks do not readily slip forward. The tired child will instinctively attempt to assume an inclined position as a relief. This should be made possible as far as practicable without depriving the child of the support that is desired in the lumbar region.

A series of back tracings in various sitting positions shows the great change occurring in the lumbar curves, and the need of firm lumbar support. Whether the child slides forward on the seat in a reclining position, or leans forward on the desk, or simply doubles

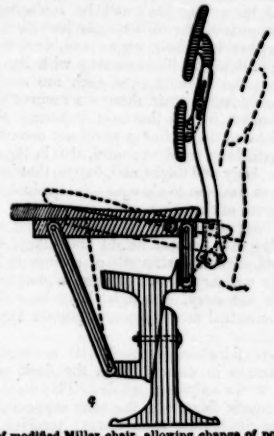


Diagram of modified Miller chair, allowing change of position without loss of back support.

up and holds the book in his lap, the normal lumbar concavity is replaced by a convexity. When the child slides forward and then leans back the lower lumbar convexity is less marked, because in this position the pelvis becomes fixed when the coccyx touches the seat, but at the same time the head is carried forward by an increased upper dorsal convexity. Leaning forward on the desk diminishes the normal dorsal convexity, although the lumbar convexity is as marked as in other bad positions. It is essential for a suitable school chair that it should furnish support in the lumbar region, that it should not press the shoulders forward, and that a change from a vertical to an inclined position be possible without a loss of lumbar support.

With a view to allowing a change from an upright to a reclining position, Miller has constructed a chair on entirely new lines. The chair of Hippauf, already mentioned, had the seat attached to the base by links parallel and of equal length. Miller substituted iron castings for the wooden links, made the front one much longer than the rear one and placed them at such an angle that they diverge several inches at the

top. Thus this chair gives what no other chair has ever given, the ability to move forward into an upright and well-supported position for writing and the ability to slide away from the desk a few inches into a well-supported reclining position for reading.

The back of this chair, which is at slightly more than a right angle with the seat, carries two transverse supports, a lumbar and a dorsal. Each is adjustable for height. The former can be moved forward and back as well.

These adjustments in the back are a great gain over the ordinary chair back. Another marked improvement is seen in the modern spring-back typewriter's chair, having a back support adjustable for height, and at an adjustable angle with the seat. The latter mechanism is in some ways more satisfactory than the back of the Miller chair, which, however, has the advantage of a forward and back adjustment of the lumbar support.

By combining the seat and castings of the Miller chair with the spring back and by replacing the two adjustable pads of the Miller chair and the single pad of the typewriter's chair with a combined dorsal and lumbar pad swinging like a mirror with the long arm uppermost, the advantages of each are secured. In such a combination chair there are secured four automatic changes, by far the most important that from the upright to the reclining position; second, that in the distance from the desk; third, that in the angle between the body and thighs, and, fourth, that in the back supports to conform to changes or individual variations in the curves of the spine.

There are other fixed adjustments, one of importance being that for seat height and others being for height and angle and strength of spring of back supports. In ordinary use all of these adjustments might not prove necessary, although those least simple are the ones in actual use in the very popular typewriter's chair.

In the combination proposed there are secured automatic changes in distance from the desk and in the position of the body as a whole. There are also possible automatic changes in the back supports. At the same time the lumbar spine always receives firm, the dorsal spine sufficient, support, no matter what the occupation of the scholar. The fact is recognized that improper attitudes result from fatigue and that fatigue must always follow any attitude, no matter how satisfactory in itself, which is long maintained without change.

THE BOSTON DISPENSARY CLINIC IN MENTAL DISEASES.[1]

BY ARTHUR C. JELLY, M.D., BOSTON.

(Concluded from No. 13, p. 312.)

March 10, 1898. M. W., twenty-two years old, single, born in Boston. No occupation. Mother died at forty of consumption and dropsy. Father living, alcoholic, abandoned wife and children. Patient is said to have been a delicate child. She became deaf after scarlet fever when ten years old. Did not get beyond second class in grammar school. Noises in her ears have disturbed her much for a long time. She thinks her first nervousness was several years ago, when she had many vague fears and worries; for example, she hesitated to undress and go to bed for fear she might do herself some physical injury.

After losing her mother she feared she could never get on alone, and is sure all would have gone well if her mother had lived. She has a brother whom she rarely sees, and she lives with a distant relative who is evidently impatient with her. She tries to help about the house but her worries so absorb her attention that she cannot apply herself. Feels she never can be better. Yesterday felt she was a curse to the world. Has thought much of suicide and felt impelled strongly to drown herself but never made any attempt. Is sure she can never go to heaven anyway. Neglected her church-going because so hopeless. Wept freely as she talked about herself. Has enormous appetite and adequate digestion. Constipation obstinate. Catamenia regular and do not affect mental state.

March 17th, 24th, 31st. She showed at each visit less depression and more self-control, and it seems probable that if she had been under good management, she might have continued to improve. But she was not helped much by her relatives, and we learned subsequently that she tried to drown herself at South Boston, was prevented by a police officer and sent to an asylum.

A brief experience with such cases was enough to show that the conditions of life at home were often so unfavorable that improvement was prevented. It was impossible to obtain proper food in sufficient quantity; or undisturbed nights; or periods of rest in the daytime; or they lived alone; or their friends failed to give them encouragement when it was needed. It is hardly fair to expect a case of incipient melancholia to improve under such conditions.

It happens sometimes that after a most thorough examination one is unable to give an opinion upon the question whether a person is insane. I saw twice in December with Dr. C. A. Craigin a very interesting case of this sort whose mental symptoms followed the development of exophthalmic goitre. These doubtful cases appear in the wards of all the general hospitals and frequently cause much trouble before a decision can be reached as to where they should go.

Sometimes alarming mental symptoms appear suddenly, and an emergency arises which demands prompt measures to ensure the safety of the individual or of others. The attention of his associates may not have been called to anything unusual in his conduct, till the patient attempts suicide, or assaults a friend, or runs away from home, or refuses to accept advice from friends, or to submit to their control. Cases of this sort have been seen at their homes with the district physicians of the dispensary. Others have been brought to the clinic by friends. Two women in this condition have come alone.

Miss H., thirty years of age, born in Sweden, a domestic, was brought to us by Dr. A. S. Knight. Not been sleeping well for two weeks; not eaten as much as usual; not done her work properly. Two nights ago she went to the house of a friend, but slept none. Yesterday, without notice to the family that employed her, she went to a town in New Hampshire where a friend lives, but could not sleep well there. Has felt for a short time that everything was upset. Could not remember what her work was. The thoughts which keep her awake are about people at home, who have done wrong; she does not know who the people are;

[1] Read before the Boston Society for Medical Improvement, March 13, 1899.

she was not connected in any way with the wrong done, but somehow she fears she may be blamed for their misdeeds. She has never heard anything of this sort said, but she has a feeling inside that makes her think so. Has abstained from eating, neither because she thought food would injure her, nor because she thought that by fasting she might atone for the wrong, but because she felt no desire for food. Has visited her friends less of late than formerly and neglected her religious duties, to which she formerly devoted considerable time.

Physical examination was negative, except that she appeared pale and thin. She was advised to go to the Boston Insane Hospital as a voluntary patient. She went immediately but remained only a few days. In this time, however, she lost almost entirely the morbid fears which had been the chief cause of her erratic conduct. For the next four weeks she continued to improve, did not show any evidence of mental disorder and then went to Sweden on a visit.

Miss M., a seamstress, twenty-seven years old, came to the dispensary alone in an agitated condition, because the people in the house from whom she got her tea had put poison in it, and she was suffering greatly in consequence. She was so distressed that I did not dare let her go away, but persuaded her to go to my office and wait for me there. In the meantime I found her sister, who took charge of her. But in the next twenty-four hours she moved three times because she was so suspicious of poisoning and so much afraid of causing trouble. She was undoubtedly suicidal. Considerable risk was run during the time that elapsed before her sisters were convinced that she needed hospital treatment.

Our experience has been convincing that some provision should be made for the treatment of mild and probably curable cases, either in a ward of some general hospital or in a small hospital especially set apart for this work. We believe that some of them (M. W. is an example) might be prevented from having a serious and prolonged attack of mental disease if put under treatment early. In this way considerable money could be saved.

Provision is needed, also, for the observation of certain doubtful cases and for the temporary care of emergency cases. But since these doubtful and emergency cases are often liable to become violent, destructive and noisy, it is obvious that harm would be done to the mild and curable cases if in their vicinity the noisy and violent were treated. Therefore, it is evident that some place should be provided for the latter; that is to say, Boston should have what is usually called a reception house.

This need has long been known to some of you. Attention was called to the subject last July by the announcement in the *Journal of Mental Science* of the retirement from active service of Dr. Frederick Norton Manning, who had held the position of Inspector-General of Insane in New South Wales for thirty years. About 1865 Dr. Manning was authorized to travel extensively and study the methods followed in various countries in the care of the insane. Upon his return, certain reforms were instituted, among which was the establishment of a reception house at Darlinghurst..

Dr. Manning refers to Belgium as a country which recognized early the need of having places for the reception of the insane. And I find that the law of June, 1850, directed that the public authorities should provide for the lodging and temporary care of the insane, either in a general hospital or in a hospital for insane or in some other suitable place; it distinctly prohibited keeping them in a prison or transporting them in company with prisoners or suspected criminals. Their detention in such provisional asylums was strictly limited to the time needed for rest on the journey or for necessary legal steps. Persons able to pay were to be charged the expenses incurred.

In France, Dr. Manning says, many of the insane reach the asylums through the police and are temporarily confined in jail. But in the Department of the Seine there is a complete establishment, called the Bureau of Admission, which is connected with the Asylum of St. Anne. There is a central administration building and two wings consisting of six separate buildings, intended for four patients each. One doctor has charge of each sex.

All the insane of Paris who pass through the hands of the public authorities are brought to this place from jails, hospitals or private residences, and after a short period of observation, are sent to the asylum best suited to their needs: if acute, to St. Anne's; if likely to be benefited by agricultural life, to Ville Everard or to Vanclose; if demented, idiotic or epileptic, to Bicetre or Salpêtrière. Such a reception house is for temporary residence, for diagnosis and for classification.

Of England, Dr. Manning wrote in 1868, the poorhouses of the various parishes are the only reception houses for the poor, and no provision is made for the rich.

In the *Lancet* of October, 1882, Dr. H. W. Gordon advised the establishment of a receiving house for the county and urged that all lunatics should first be sent to this institution. But apparently nothing of this sort was done, because the *Journal of Mental Science* of July, 1898, reports "that there is a rumor that the London County Council is considering the establishment of reception houses such as those conducted by Dr. Manning in New South Wales."

Dr. Manning's reports from 1868 to 1893 give full information about the character of the houses and the work done there. (I have not been able to get reports later than 1893.)

Urgent cases may be received upon the certificate of one physician, though nearly all cases come certified by two physicians. The ordinary length of stay is fourteen days; but in exceptional cases this may be lengthened or shortened under strict regulations.

In the report of 1880 he says: "It has been found desirable to admit to the reception houses numerous doubtful cases in which neither the magistrate nor the medical practitioners are satisfied of the existence of real insanity, and which would otherwise be remanded to jail for treatment. Cases should be selected judiciously so as not to throw open the door to habitual drunkards suffering from delirium tremens."

In the report of 1882 he says: "Patients under remand from magistracy, 227. Of these 153 were set at large, 61 certified as insane and sent to a hospital; four died. The work done has therefore been large and important. Scientific treatment can be applied at an early stage and so some cases prevented from passing into more advanced stages."

It appears, therefore, that there are three sorts of reception houses now in operation: (1) A ward connected with a general hospital; (2) a ward con-

nected with a hospital for insane; and (3) a separate establishment. Of these the first seems the least desirable. In regard to the second it seems hardly probable that our people would take kindly to a system such as that at St. Anne's, where the physicians assign the patient to the hospital that seems best suited to his needs. The plan of separate houses, such as those of Dr. Manning, appears to afford many advantages over either of the other plans. And it is to be hoped that the earnest co-operation of all physicians in this neighborhood will soon lead to the establishment of a reception house worthy the city of Boston. In this endeavor, however, we must not lose sight of the equally important need of making suitable provision for treating mild cases in the early stages.

Clinical Department.

DIVISION OF A URETER WITH SUCCESSFUL END-TO-END SUTURE OF THE SAME IN A CASE OF HORSE-SHOE KIDNEY.

BY DUDLEY P. ALLEN, M.D.,
Professor of Surgery, Western Reserve University; Visiting Surgeon to Lakeside Hospital; Consulting Surgeon to Charity Hospital, Cleveland, Ohio; Member of the American Medical Association,
AND
C. E. BRIGGS, M.D.,
First Resident Surgeon, Lakeside Hospital.

The following case of operation upon a horse-shoe kidney is so unique that a detailed history of the same would seem to be interesting. The patient, Miss B., was admitted to Lakeside Hospital February 24, 1899. She was thirty-three years of age, single, of small stature, undeveloped figure, and had always been very delicate. When thirteen years old she noticed a lump in the right iliac region, the same being hard and immovable. The lump was painful during menstruation, the pain continuing for seven or eight days after the flow ceased and she was confined to her bed in all about ten days at each menstrual period. Between menstrual periods she was able to be up and about. From the age of nineteen to twenty-three the dysmenorrhea was extreme, and a considerable amount of morphine was necessary to control it. Five years ago a laparotomy was performed upon the patient and a tumor of the right ovary was said to have been removed. Two years later, however, at the first examination following the operation a mass was found in the right iliac region about the same size as that which had been previously observed. This mass has not varied in size up to the present time, although the patient thinks it is slightly larger at the menstrual period. The operation just mentioned seemed to give her, however, considerable relief from pain. Three months ago the patient commenced to suffer from painful and frequent micturition. This was so severe that she was confined to her bed for eight weeks and has had constant doses of opium.

On examination of the patient I found her to have a small vagina and an infantile uterus. The adnexa could not be palpated nor could the fundus of the uterus be felt. A tumor could be felt at the brim of the pelvis on the patient's right side, reaching upward almost to the level of the umbilicus. It was oval, somewhat irregular in form, and movable, but it could not be determined that the tumor moved separately from the uterus.

An operation was decided upon and was performed on March 6th. On opening the abdomen it was found that the right tube and ovary had been removed. As the patient's suffering had been so great the only promise of relief seemed to be in the removal of the other tube and ovary and the extirpation of the uterus together with the cervix.

After this operation was performed the mass still remained at the brim of the pelvis on the right side. It was retroperitoneal, somewhat lobulated and it seemed probable that it was a retroperitoneal lipoma. The possibility of a horse-shoe kidney was suggested. An incision was made through the peritoneum and fat and it became apparent that the tumor was a kidney. Being on the right side and the possibility of a horse-shoe kidney suggesting itself an examination of the left side was made and no kidney was felt. Inasmuch as the patient was in the Trendelenburg position and the examination was by no means easy it was thought wise to make a second examination of the left renal region. When this was done it was supposed that the kidney was palpated. I proceeded, therefore, to remove the mass at the brim of the pelvis, dissecting from left to right. I encountered and divided one ureter. As I proceeded with the enucleation of the kidney I found a second ureter implanted into its substance. It seemed probable, therefore, that my examination of the region of the kidney had been incorrect and I proceeded for the third time to palpate the region of the left kidney. I found that in the second examination the omentum had been carried upward with the hand and had so wrapped itself around the spleen that it had lead me to mistake the spleen surrounded by omentum for a kidney with perirenal fat. The question then arose as to how the operation could be successfully terminated. I could not make out that the kidney had a single pelvis, so it was not possible to ligate the proximal end of the divided ureter and trust to the discharge of urine through the right ureter. I also tried to see if it was possible to insert the end of the ureter into the pelvis of the kidney from which the right ureter was discharged, but I could not bring the pelvis on this side into view. An operation of this sort therefore was impossible. Inasmuch as at the time of the division of the ureter I had seized the distal end with a pair of hemostatic forceps, thus crushing it, it made the remaining portion of ureter so short that a lateral anastomosis seemed impossible. The proximal end of the divided ureter was also cut off so high up that it was impossible to implant it into the bladder. The only thing which remained for me to do was to make an end-to-end anastomosis. I proceeded to do this with very fine catgut and made a careful and accurate approximation. Fearing lest there might be leakage of urine followed by infection of the abdomen I utilized a flap from the anterior wall of the pelvis which had been partly formed by the removal of the uterus, and drawing this upward and backward sutured it to the brim of the pelvis. By this means the abdominal cavity was entirely closed off from the pelvis, and iodoform gauze was carried through the vagina and pelvis into the retroperitoneal opening made in the operation attempted upon the kidney.

The same afternoon a glass drainage tube was carried through the opening in the vaginal vault into the

pelvis to facilitate drainage and permit the escape of any urine which might leak from the ureter. The patient endured the operation very well and remained perfectly dry, the urine passed by bladder being normal and free from blood.

On March 9th there was a little increased vaginal discharge and a suspicion of the presence of urine. A few days later the presence of urine in the vaginal discharge became unquestioned.

It is not necessary to give a further detailed history of the case. It will suffice for the purpose of the present paper to say that the patient for several days passed no urine whatever by vagina but would pass a normal amount by bladder; again for a few days there would be more or less leakage, when it would stop entirely. The patient remained in the hospital until the 1st of May.

I heard from her last on the 30th of June. At that time she had gained eight pounds in weight, there was no leakage of urine by the vagina and the patient was in better health than she had been for years, considering herself quite well.

Of course, in a case of this sort it is impossible to demonstrate absolutely the success of an end-to-end anastomosis of a divided ureter. It might be said that the patient had but one pelvis to the kidney and all of the urine passed by the undivided ureter. It might further be said that the calibre of the ureter had been closed by cicatrization, and that a portion of the kidney which it drained had become atrophied, its function being taken up by that portion of the kidney drained by the right ureter. An attempt was made during the progress of the case to see whether on the days in which there was leakage of urine *per vaginam* the amount passed by bladder was less, and also whether on days when there was no leakage *per vaginam* the amount passed by bladder was greater. I was unable, however, to satisfy myself upon either of these points. Without being too dogmatic in my opinion, I think that it is fair to conclude that the case is one of successful end-to-end suture of a divided ureter. The evidence certainly is as strong as that given in describing other operations of ureteral anastomosis.

The method used to protect the abdominal cavity from possible infection by a flap of peritoneum taken from the anterior pelvic wall and united to the pelvic brim is, so far as I know, unique. The location of the horse-shoe kidney is also lower than that which is commonly found. It is not my intention to go extensively into the literature of this subject, since the publications which I wish to refer to subsequently summarize sufficiently what has been done in this direction. It may be of interest, however, to give a brief statement of the present status of operations upon the ureter.

Efforts to restore the integrity of the ureter when for any reason it has been completely divided have lead to the employment of two methods of anastomosis, one of which has been variously modified. Perhaps the best established procedure is that of lateral anastomosis, first proposed by Van Hook in 1893. By this method the distal end of the ureter is ligated, and below the ligature a longitudinal slit is made into which the proximal portion is drawn and secured with sutures.

Experimental work upon animals by Van Hook, and later by Bloodgood, has been eminently successful, both as regards the integrity of the joint and the subsequent patency of the canal. The end-to-end anastomosis has been subject to several modifications. Animal experiments have been varyingly successful. Invagination of the proximal into the distal end after stretching the latter was practised by Pozzi on dogs with marked success, but the experiments repeated by Tuffier and Bendinger were equally marked failures. Transverse end-to-end suture over a gum-elastic catheter was attempted by Gusserow and Pawlik without success. Oblique end suture has been done successfully on dogs by Bovee. No other animal experiments have been found recorded, but in addition to these on the human subject there has been done a simple end-to-end suture, invagination of the proximal into the distal end after slitting the latter, and invagination without slitting over a gum-elastic catheter. These methods have all been well illustrated in a recent article by Markoe and Wood. Fourteen cases of anastomosis by the above method have been recorded. An excellent summary of 12 of these, including one of his own, has been made by Bovee. A case of end-to-end invagination with lateral slit by Winslow and a case of simple invagination over a gum-elastic catheter by Markoe and Wood complete the list, so far as we can find after an independent search of the literature. Of the 14 previously reported cases three were by lateral anastomosis, 11 by end-to-end suture. Of the latter, one was by invagination over a catheter, two by invagination with a lateral slit, four by simple transverse suture, three by transverse suture over a catheter and one by oblique suture. As these cases have been so completely summarized recently by Bovee and Markoe and Wood, further notes seem an unnecessary repetition.

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Medical Progress.

REPORT ON PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Concluded from No. 13, p. 319.)

BLUE GLASSES IN THE DETECTION OF CUTANEOUS ERUPTIONS.

Jullien[5] extols the merits of blue-glass spectacles in distinguishing macular eruptions upon the skin. Broca in 1893 was the first to call attention to this aid to diagnosis, and Haan in 1898 reported that, wishing to utilize the principle of complementary colors in the detection of cutaneous eruptions, he had for several years used a monocular glass, so constructed that the object was viewed through water, colored blue. Jullien has made use of this method of examination for three years, using binocular cobalt glasses. He con-

[5] Annales de Derm. et de Syph, January, 1899.

siders it best to shun a very bright light, that of cloudy weather being preferable. The glass ought to be placed as near the eye as possible in order to avoid a diffusion of the rays, and to separate the eye from all outside rays. Broca claimed that by this means an eruption could be detected before it was visible to the naked eye, that the trace of an antecedent eruption could be determined, and that an aborted eruption could be seen. Jullien has found that the elements of a syphilitic roseola may be detected without doubt some time before they are distinguishable to the naked eye. The advantage of this is seen when it is necessary to establish the diagnosis or to begin treatment as early as possible. There is a considerable proportion of cases in which no symptoms are observed after the chancre, until perhaps several years have elapsed, when the ordinary late lesions may appear. Jullien surmises that in most of these instances an early roseola may be detected by means of blue glasses.

An eruption may also be detected in this way some time after it has become invisible to the naked eye. The vascular system is still affected and the remains of the inflammatory infiltration are still left. These alterations cannot be perceived by the eye alone, but may be when aided by the blue glasses. These spots are apt to persist about the axilla, at the upper angles of the scapulæ or upon the sides of the thorax. Syphilides may thus be detected at the end of six months, and Jullien has often recognized them at the expiration of a year.

Slight scars also may be detected by this method which cannot be seen ordinarily, as there is the same optical difference between a cicatrix and the hyperemic skin. From a medico-legal point of view this method may be of considerable value.

BLASTOMYCETIC DERMATITIS.

Hyde, Hektoen and Bevan[6] report a case of this affection occurring in a man of fifty-seven, who was a day laborer by occupation and a resident of Chicago. He was a native of Holland, leaving that country when in his eighteenth year for the East Indies, where he served in the army. He returned to his own country and after eight or nine years he came to America. His mother, three sisters and one brother died of consumption.

The affection had begun about five years before with a small red spot on the right leg below the knee. This increased in size until it occupied almost the whole anterior surface of the leg, and appeared as a raw, bleeding surface, which finally healed, under treatment, with the exception of a small spot.

One and a half years before, the left thumb began to be affected in a way similar to the leg, and the affection extended until the dorsal surface of the left thumb and almost the whole dorsal surface of the left hand presented a reddish denuded patch of a verrucous appearance, and covered with a moist and sticky exudation. There was considerable pain, which radiated up to the elbow, and the fingers became partially flexed, the little finger permanently so. The palm was not affected.

Operative interference was discussed but was not resorted to, as under treatment with the iodide of potassium in daily doses of one hundred grains, the small sore on the leg healed and the patch on the hand was very much improved.

[6] British Journal of Dermatology, July, 1899.

On microscopical examination of a piece of the tissue excised, it was found that a parasite was present of the order of the blastomyces. It was found in the tissues, and could also be demonstrated in pure cultures, the first appearance being that of a round body with double membrane, filled with a granular protoplasm, with and without nuclei. It could also be shown in the act of budding. There were numerous miliary abscesses in the epidermis, which were regarded simply as accidental. The corium contained giant cells, mast cells and polynuclear leucocytes. The organisms were not so numerous in this case as in those previously described, being found only in the epithelium in the miliary abscesses. They were cultivated best upon beerwort, glucose and glycerin-agar. They also grew readily on blood serum and on potato.

When injected subcutaneously into guinea-pigs and rabbits this organism produced local abscesses, which were *sometimes* followed by gradual emaciation and death after from two to four weeks, and foci of granulation tissue in the lungs and liver contained blastomyces.

The writers then passed in review the cases of this affection that have been previously reported, mentioning Gilchrist, Busse, Welles, Hessler, etc. They also refer to a case of a woman of sixty-five, who first developed a papule on the posterior surface of the right leg. This was soon followed by a second papule, and the two united and an ulcer was formed, which would heal and then reopen. The growth was regarded as an epithelioma, but microscopic examination of the excised mass showed epithelial proliferation and miliary abscesses containing blastomyces.

It is pointed out that seven cases of this affection are on record in each of which the organism has been cultivated and carefully studied; of these, six involved the skin alone. Five of the patients were men and two were women, all in or near middle life. The disease usually lasted from five to ten years. The dorsum of the hand and the anterior surface of the right leg are the parts most often primarily affected, and the writers think it fair to conclude that in these cases the affection has been conveyed from the hand to the leg. Hand lesions have been prominent in four of the seven cases.

With regard to diagnosis, the affection resembles tuberculosis to a striking degree, especially the form known by the name of tuberculosis verrucosa cutis, and the writers are not prepared to say that a decisive diagnosis can at present be made from the clinical appearances alone. At the same time the assertion is made that when their attention had been directed to blastomycetic dermatitis, it became probable to them that other cases of this disorder had been observed by them, and considered instances of tuberculosis.

So far as can be judged from the small number of cases on record, the prognosis of the affection is pretty good. The iodide of potash produced a marked improvement, and the hand is reported to have become worse when this drug was omitted. The writer concludes: (1) That there is sufficient evidence to justify the acceptance of blastomycetic dermatitis as a distinct disease, due to the invasion of the skin by one of the forms of the yeast family; (2) that this dermatosis bears a close resemblance to certain forms of cutaneous tuberculosis, and that a microscopical examination is necessary to distinguish it from this latter affection; (3) that the internal administration of the iodide of

potash should be tried in future cases, on account of the improvement produced by it in the case reported.

[The resemblance of these cases to verracous tuberculosis is so close that the utmost care should be taken in excluding this affection. It is not impossible that a complication may exist in some instances, the yeast parasite being engrafted on a pre-existing tuberculosis. An exhaustive negative search for the tubercle bacillus would add great strength to a positive diagnosis of blastomycetic dermatitis. Rep.]

THE NATURE OF ERYTHEMA INDURATUM.

Erythema induratum was first described by Bazin,[1] but had been overlooked and forgotten until a few years ago, when attention was again directed to it by the French school. The nature of the affection has not yet been definitely settled, however. It was regarded as a scrofulide by Bazin, with the vague conception that this term conveyed at that period. Pringle and Crocker have regarded it as a manifestation of tuberculosis, without definite anatomical proof. Audry thought that it was a fatty degeneration, developing upon a territory affected with edema, while Leredde considered that it belonged in the class of "tuberculides."

Thibierge and Ravant's studies were made on cases of indurated erythema, which were found to have the same anatomical character. The subjects were all young women, two of the cases being of the non-ulcerated, one of the ulcerated, variety. The microscope showed the tumors to be divided into lobules by bands of sclerous tissue in the subcutaneous region. Vascular changes were noted, with an infiltration of embryonic and giant cells in the neighborhood, with some granular degeneration and necrosis. In no instance was the tubercle bacillus discovered, from twenty to twenty-five sections being searched in each case. Attempts at inoculation were negative except in one instance, that of a girl of fifteen, who had ulcerated lesions on the legs, cicatrices upon the thighs, and tuberculosis of one finger. A guinea-pig inoculated with a bit of the tumor that was not ulcerated was killed thirty days after the inoculation, and showed a typical tuberculosis, the glands, liver and spleen being filled with tubercles. A second guinea-pig was inoculated with the spleen of the first and developed tuberculosis a month later. The writers consider that the vascular lesions, the inflammatory and degenerative changes, and the giant cells are sufficiently suggestive of tuberculosis, which is made positive, in their eyes, by the result of inoculation in the last case. The absence of the tubercle bacillus they do not regard as a strong argument against their theory, inasmuch as it is so difficult to find in almost all forms of cutaneous tuberculosis, and a longer search might have demonstrated its presence. They suggest the name "tuberculome" for these tumors.

The clinical arguments in favor of the tubercular origin of this affection are then touched upon, and the writers repeat that the subjects of indurated erythema often have a tuberculosis of other organs, or have lived in immediate contact with a person affected with tuberculosis.

The importance of the vascular lesions in erythema induratum is insisted upon, and the opinion is hazarded that the nodes may be the result of an embolic process. The writers conclude that Bazin's erythema induratum belongs in the class of cutaneous tuberculoses, and is caused directly by the action of the tubercle bacillus.

[1] Thibierge and Ravant: Annales de Derm. et de Syph., June, 1899.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

Regular meeting, Monday, March 27, 1899, Dr. R. H. Fitz in the chair.

Dr. J. H. McCollom read a paper on

SCARLATINA.[1]

From the examination of the health reports both in this country and in Europe and from the study of 1,000 cases the following conclusions may be drawn:

(1) That scarlatina is more prevalent in Boston than in some of the larger foreign and American cities.

(2) That scarlatina has diminished in frequency in Boston during the past three years owing to the establishment of an isolation hospital sufficiently large to accommodate all applicants.

(3) That the death-rate of scarlatina in the hospital, considering the class of cases that are treated, is remarkably low.

(4) That the period of isolation in scarlatina, in order to be effectual, should be continued for a long time, at least fifty days.

(5) That rest in bed and a non-irritating diet during the first few weeks of the illness are very important factors in reducing the frequency of renal complications in scarlatina.

Dr. Rotch: The paper is a very valuable one. Certain points in it should attract especial attention: First there is what Dr. McCollom describes as the desquamation around the edge of the nails. This is not, I think, generally looked for by the general practitioner. Also what Dr. McCollom has noticed about the papillæ of the tongue is comparatively new. What he says about the relapses is important. These three points in the paper are of especial interest. I myself rather believe in the tub bath for little children where you can have a tub by the bed and wrap the child in a thin blanket and gradually lower it into the tub, graduating the temperature of the water exactly with a thermometer; I think it can perhaps be managed better than by sponging in bed, and I think the child minds it rather less. We should be careful about the application of cold water to young children. Certain children show very serious signs of collapse after it. I fully agree with Dr. McCollom that it is most valuable in the treatment of scarlatina.

Dr. Buckingham: I think Dr. McCollom has done a valuable thing in calling attention to these relapses and second attacks. I do not think that they are appreciated by the community at large as much as they ought to be. They certainly do occur.

As to the use of fats on the skin, my experience has not been large enough to speak very positively as to how much they affect temperature, but I believe the effect of vaseline is not the same as that of the animal fats. I have had patients treated with vaseline on one side of the body and with lard on the other side, and

[1] This paper appeared in full in the Report of the Medical and Surgical Staff of the Boston City Hospital for 1898.

the way in which they remain on the skin is quite different. Lard will soak in and disappear very quickly with a high temperature, but vaseline will not.

Will Dr. McCollom please state how often he finds an antitoxin rash simulating scarlet fever and having the scarlet fever appearance in the throat and mouth?

Dr. McCollom: In every case of scarlet fever you have an eruption in the throat, and this has been one important point in the differential diagnosis.

Dr. Farlow: Dr. McCollom has spoken of the enlarged papillæ on the side of the tongue as being universally present in scarlatina. It seems to me that I have seen a similar condition occasionally when scarlatina was absent, and I would like to ask Dr. McCollom if he has not seen such cases.

Dr. McCollom: Except in scarlet fever I don't think you ever see this peculiar appearance. You see enlarged papillæ, but you don't see the papillæ enlarged in this peculiar way. You cannot describe it. I never saw it in any other condition or disease. You see enlarged papillæ in measles, but the enlargement is entirely different from the enlargement you see in scarlet fever. It is possible, I presume, for a person to have enlarged papillæ of a certain type, but this peculiar type is something I think that is only found in scarlet fever and not in any other disease.

Dr. F. H. Williams: We are all much indebted to Dr. McCollom for his valuable paper. I should like to ask about the use of other things than vaseline on the skin, with a view of getting rid of the desquamation earlier; for example, a mixture of glycerin and peroxide of hydrogen.

Dr. McCollom: I have not tried a mixture of glycerin and peroxide of hydrogen, and it possibly might accelerate desquamation. I have tried about everything else without any satisfactory result.

Dr. Williams: In quite a number of cases it did shorten the period. A few years ago I used in the scarlet-fever ward of the Boston City Hospital a mixture containing one part of glycerin and seven parts of ten-volume hydrogen-peroxide solution. In a series of cases this mixture was applied daily to the skin of every alternate patient and I found that the average period of desquamation was shortened in those where it was used as compared with those in which it was omitted.

Dr. Morse: I should like to ask how the enlargement of the papillæ which you get in young babies and children in gastro-enteric disturbances differs from that in scarlet fever.

Dr. McCollom: There are two varieties of enlargement in scarlet fever. One looks as if Cayenne pepper had been rubbed on the tip and edges of the tongue. In the second the papillæ assume a sort of button-like appearance entirely different from the appearance that you see in young babies who have digestive disturbance.

Dr. Morse: Have you examined a large series of young children with reference to this point?

Dr. McCollom: Quite a number, but they look entirely different from the enlarged papillæ you see in scarlet fever.

Dr. Fitz: Dr. McCollom recommends that the period of quarantine be fifty days. Has he evidence which makes that period necessary?

Dr. McCollom: The process of desquamation is not entirely completed in the majority of cases in less than that time. I have known quite a number of cases where children have been released from quarantine in three weeks and the rest of the family came down with scarlet fever in five or six days. In these cases other sources of infection could be eliminated.

Dr. Rotch: Should we not consider the individual rather than the average case in determining the period for isolation? In certain cases where the skin is not very deeply affected the desquamation may run a shorter course. Does Dr. McCollom think it worth while to isolate cases fifty days, where the desquamation has entirely ceased in a far less time?

Dr. McCollom: If I did not find necrotic skin in the commissures of the toes and fingers, I should say the patient could not communicate the disease, but as long as there was necrotic skin — and in the majority of cases you will find necrotic skin up to forty-five and fifty days — I should think the patient should be isolated.

Dr. Brough: Dr. McCollom has referred to the great diminution in the number of cases of infectious disease in Boston since the establishment of the hospital. It has seemed to me that there is another and very important factor in causing the decrease in the number of cases. This was the establishment by the Board of Health of the Medical Inspectors of Schools. In addition to their other duties these inspectors examine into the isolation of every case of infectious disease treated at home. The city is divided into forty-nine districts and each inspector reports on the isolation of each case in his district. This inspection began about the same time that the new hospital for contagious diseases was built. We now find owing to this inspection that more care is taken of the isolation of the infectious cases at home than ever before. The hospital has been of incalculable value to the Board of Health in receiving cases that could not be isolated at home. Only these cases that can be properly isolated are allowed to stay at home. If isolation can be carried out at home the case is removed to the hospital whether the family desire the sick person to go or not.

The Board of Health has the power of forcibly removing these cases if there is any opposition, and this power is used very frequently. We thus find that this results in that only selected cases are allowed to remain at home. Of these cases that remain at home, isolation is kept up until the patient is thoroughly free from any danger of infecting others, which the medical inspector so certifies. Thus the new hospital has enabled the Board of Health to carry into effect the proper isolation of infectious diseases and this has certainly been an important factor in reducing the number of cases in the last few years.

Dr. Townsend: What was the average length of isolation?

Dr. Brough: About four weeks is the average time.

Dr. Townsend: If fifty days, or seven weeks, is needed, as advised by the reader, four weeks would be very insufficient and many more cases of scarlet fever would occur after isolation has been given up in those families. I think myself four weeks is short, but five or six weeks seems safe in a great many cases, and the saving in time of two weeks or even one, in private practice, is a great boon to the family as well as to the physician. Each case ought to be judged by itself and quarantine not relaxed until all desquamation has ceased. I have found warm butter useful during this period in hastening the process of desquamation.

Dr. Fitz: If, as Dr. McCollom suggests, a protozoön is the cause of the disease, it is a little difficult to understand its passing out through the cuticle.

Dr. McCollom: I doubt if scarlet fever is a bacterial disease. We know that so long as a child is desquamating he is a source of danger to other children. When I state fifty days, it seems to me in the majority of cases fifty days is a much better time than four or five weeks, and I have known of quite a number of cases where the isolation has been only four or five weeks and a second series of cases has appeared in the families.

Dr. Fitz: The possibility comes in that the second series may have received the disease from other sources.

Dr. McCollom: In these cases I was thoroughly convinced that the children contracted the disease from the child who had scarlet fever originally.

Dr. Folsom: Have the cases at the hospital ever been tabulated and analyzed in reference to that point, with regard to the length of time desquamation is actually observed in the various cases?

Dr. McCollom: They never have been tabulated. There is an immense amount of material.

Dr. Folsom: I think my individual cases must have amounted to five hundred or more and I must say I should be very unwilling indeed to make any guess upon those cases of the length of time during which quarantine is necessary. The period of time during which desquamation was observed after the initial fever varied very much indeed in the individual cases. I have never seen any external application which made the least difference with regard to that point except cold baths. I believe that cold baths materially shorten the length of the disease. All these cases of mine were treated with cold baths from the beginning when the temperature got beyond 102.5° F. and frequently, as they are given in typhoid fever. As Dr. Rotch says, I don't know any other one measure of treatment which gives so much comfort to the child, and it seems to me that it makes a difference in the length of time during which desquamation was observed. There must be an immense mass of evidence at the hospital on that point and it seems to me that it would be of very great value if some one would tabulate the cases and find out what the facts are. It is a very great hardship if a child has a mild attack of scarlet fever and desquamation disappears soon to maintain a long quarantine, yet of course it is important from the point of view of the public that it should be long enough to be safe.

Dr. McCollom: It is an important point that a mild attack of scarlet fever desquamates more slowly than a very severe attack. I have seen a severe case get through desquamating in four weeks. Before the patients are discharged they are carefully examined, and if there is any necrotic skin anywhere it does not seem to me they ought to be discharged, because they can communicate the disease to other people.

Dr. W. T. Councilman presented the subject of

TUBERCULOSIS,

illustrating his remarks by a large number of lantern-slides showing the various tubercular lesions.

Bust of Emil Dubois-Reymond. — A marble bust of Dubois-Reymond has been placed in the Physiological Institute of Berlin.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirty-Third Annual Meeting, held at Philadelphia, May 30, 31, and June 1, 1899.

FIRST DAY.

The President of the Association, Dr. John A Fordyce, opened the meeting with an address in which he gave an admirable *résumé* of the advances in dermatology that have been made within the past year.

Dr. M. B. Hartzell read a paper on

EPITHELIOMA AS A SEQUEL OF PSORIASIS, AND THE PROBABILITY OF ITS ARSENICAL ORIGIN.

The patient, a woman of thirty-five years, had been affected with psoriasis since the age of fourteen. Upon the outer side of the left heel there was an ulcer two inches in diameter with shallow edges and a deep centre. The palms and soles showed marked keratosis, with corn-like elevations. Upon the elbows and trunk were a few patches of psoriasis which presented nothing unusual. In the left groin was a bosselated tumor the size of a small orange, firm and elastic except at the summit, where it was soft. The patient had been given arsenic in considerable doses over long periods of time. The patient developed the horny condition of the palms and soles about two years after the psoriasis had made its appearance. Later small superficial ulcers occurred beneath the horny masses and obstinately refused to heal. At this time the tumor in the groin speedily ulcerated, forming a deep, fungating, foul ulcer which discharged abundantly. This was soon followed by a more or less continuous fever, loss of appetite, rapid emaciation and death in about two months. Histologic examination of an excised section of the border of the ulcer demonstrated beyond doubt its epitheliomatous nature.

Ten cases of associated epithelioma and psoriasis have been reported. In all of them the psoriasis was of quite long standing; in all but 3 there was some form of keratosis; and in all epitheliomatous change took place beneath one or more of the horny excrescences. In all in which mention is made of treatment, 8 out of 11, arsenic had been given in considerable quantity over a long period. It is noteworthy that in 50 per cent. of the cases the lesions were multiple and that one-half of the patients were under the age of forty. In conclusion, the writer remarked that the evidence thus far in our possession was of such a character as to permit us to accept as very probable, at least, the arsenical origin of the epithelioma in these cases.

In the discussion that followed, some of the members held that the epitheliomatous change was due to the continued irritation produced by the excessive keratosis and could not be directly traced to the arsenic. Dr. Hartzell, in closing, maintained that the arsenic being the cause of the keratosis was responsible for the epithelioma that it superinduced.

Dr. L. D. Bulkley, of New York, read a paper entitled

IMPERFECT OR DEFICIENT URINARY SECRETION AS OBSERVED IN CONNECTION WITH CERTAIN DISEASES OF THE SKIN.

The article was a record of the results of the examination of the urine in several hundred cases of

skin disease. Careful quantitative analyses had been made of the various urinary constituents. No uniform characteristics were found peculiar to any particular dermatosis. The urine often varied greatly in the same disease. In psoriatic patients the urine was usually of high specific gravity and contained urea in excess.

DR. J. T. BOWEN, of Boston, reported

TWO EPIDEMICS OF ALOPECIA AREATA IN AN ASYLUM FOR GIRLS.

Several months after a young girl had been attacked with areate baldness of the scalp the disease broke out among the other inmates of the institution in which she lived, and spread so rapidly that in a short time 63 of the 69 girls were attacked. After several years' absence the original patient returned to the asylum and again gave rise to an epidemic of the disease, this time 26 out of 45 inmates becoming affected, although only 4 of these were among those previously attacked. The disease differed only from the ordinary type of alopecia areata in the smallness of the patches and their angularity. Numerous examinations of the hairs failed to show the presence of any parasite. Similar epidemics have been recorded by French observers, but heretofore none has been noted in America.

DR. JAMES C. WHITE, of Boston, who saw the patients referred to, was inclined to believe that the disease was not a true alopecia areata as he comprehended the term.

The discussion that followed revealed the fact that while many American dermatologists still hold to the trophoneurotic theory as an explanation of the majority of cases of alopecia areata, there is an increasing disposition to accredit the theory of contagion.

EVENING SESSION.

DR. S. SHERWELL, of Brooklyn, read a paper entitled

REPORT OF A CASE OF CONGENITAL DERMATITIS HERPETIFORMIS AND ALMOST COMPLETE ABSENCE OF FINGER AND TOE NAILS.

DR. D. W. MONTGOMERY, of San Francisco, reported

A MACULO-ANESTHETIC LEPRIDE OF THE PALM.

DR. J. C. JOHNSTON, of New York, read a paper on

NECROTIC GRANULOMA AND INDURATED ERYTHEMA IN THE SAME SUBJECT.

(To be continued.)

FILTRATION FOR THE WATER SUPPLY OF PHILADELPHIA. — Now that the commission of experts appointed by Mayor Ashbridge, says the *Philadelphia Medical Journal*, has reported in favor of slow sand-filtration as the best remedy for the purification of the water supply of the city of Philadelphia, councils should lose no time in putting into speedy and active operation the recommendations proposed, thus at once freeing the city of the stigma that it has so long borne, and stopping the destruction of life that its citizens have so patiently and so meekly endured. Let us have filtered water, and let us have it without delay.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 5, 1899.

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THE INTERNATIONAL CONGRESS ON VENEREAL DISEASE.

As previously announced, an international conference for the prevention of syphilis and venereal disease has recently been held in Brussels, and, as its importance warranted, was well attended by French, German and English syphilographers, as well as by others interested in the general question. The significance of the meeting lay not only in the importance of the subjects under discussion, but also in the fact that this was the first international recognition of this type of disease, as a menace to society. Such congresses will tend to force upon all civilized countries the absolute necessity of recognizing the widespread prevalence of venereal affections and of instituting such prophylactic and protective measures as may ensure to the greatest degree the general health of the community.

From an interesting report which has appeared in the current number of the *Medical News*, regarding the proceedings of the Congress, we should judge that the same difference of opinion prevails to-day as in times past relative to the legal control of prostitution. Discussion was evidently active, if not actually acrimonious, and no doubt the various disputants came away more convinced than ever of the correctness of their own positions. Inevitable as this outcome usually is, nevertheless such discussions are exceedingly valuable in bringing out essential points of difference, and determining accurately the varying conditions under which work must be attempted. In general the French and German speakers advocated official control, while the English, the most notable of whom was Dr. Jonathan Hutchinson, opposed such methods. Hutchinson was inclined to think that the danger of syphilis had been exaggerated and that a popular fear was being aroused which was unnecessary and unfortunate.

A proposition, moved by Fournier, of Paris, urging upon governments to use all their powers for the absolute suppression of juvenile prostitution was unanimously adopted. A second proposal suggested the

foundation of a society of sanitary and moral prophylaxis, whose centre should be in Brussels and which should encourage the creation of a quarterly publication, and also future meetings of the Congress — the next to be held in Brussels in 1902. In a third proposition the conference recommends governments to secure a supply of doctors thoroughly competent in this specialty, by instituting in each university complete and compulsory courses, the subjects of which shall form part of the State examinations, the examiners to be specialists. A fourth proposition related to the more careful supervision of orphan children. A fifth proposal advocated the equal application of laws to *souteneurs* and pimps as to prostitutes. A sixth proposition suggests the appointment by government in each country of a commission to determine the frequency of venereal disease, to inquire as to existing institutions for its treatment, and to reach some definite conclusions as to the best means of preventing venereal disease. A seventh proposal urged governments to avail themselves of every proper opportunity to draw public attention to the dangers of prostitution. An eighth and final resolution expressed the wish that the statistics of venereal diseases might be arranged on a uniform basis for all countries.

We shall await with interest the final and official report of the Congress. Medicine has no more difficult problem to solve than this of venereal disease and its relation to society at large. As was insisted upon at this meeting, the sentimental side of the question must be left aside, or given a subordinate place, until the scientific aspects of the question are exhausted. The spread of venereal disease must be prevented at all hazards; that is the chief end to be attained, whether by legal control or by methods directed toward the completer education of the people in matters related to the sexual sphere. With all the difficulties in arriving at general conclusions, one fact is perfectly clear, and that is that the conditions to be met differ widely in different countries, depending upon the character of the people and the openness with which prostitution is practised. It is easy to conceive that forcible repression in the case of one country, whose inhabitants have certain traditions and moral standards, would be completely inefficacious as applied to another of different traditions. In any case the problem is a knotty one, which we are safe in assuming will not be definitely solved while human nature and the sexual instinct remain as they are. This should, however, not discourage our efforts in the right direction, and such conferences as that just held at Brussels undoubtedly do much toward clearing the way for reasonable and effective action in the future.

THE SCIENTIFIC STUDY OF PHYSICAL TRAINING.

Our attention has been called to the fact that we seemed not to give due credit to the work of Williams and Arnold in our editorial of September 14th, on "Scientific Study of Physical Training." It will be remembered by those interested in the subject that a paper by these writers appeared in the *Philadelphia Medical Journal*, June 3d, which concerned itself particularly with the effects of prolonged muscular exercise upon the heart. This work consisted in a study of the physical condition of certain men, not for the most part in strict training, before and after a long running contest known as the Marathon race. It follows that, valuable as their conclusions are, their opportunities for observation were limited and not to be compared in scope to the possibilities afforded Darling in his investigations of the Harvard crews, extending as they did over a considerable period of time under varying conditions. It was by no means our intention to belittle any work done toward the solution of the difficult problems of training; we need all the evidence possible from every source. We merely took Darling's completer paper as a type of investigation which demands encouragement. Any other interpretation of our editorial comments on the subject is misplaced.

The following remark was made at the outset in our communication: "We desire to call attention not so much to the details of Dr. Darling's interesting investigation, for which we would refer our readers to the original paper, as to the significance of such studies in general with reference to the highly important matter of athletic training." If we fell short of this general aim in our subsequent remarks, we regret it, and are quite willing to give credit whenever and wherever it is due.

MEDICAL NOTES.

A Memorial to Dr. Mueller. — It is reported that a memorial to Dr. Mueller, who lost his life while studying plague a year ago in Vienna, is about to be unveiled.

Compulsory Vaccination in Japan. — We learn from the *Medical News* that one of the latest signs of progress in Japan is the announcement that the Japanese Government has decided to make vaccination compulsory in Japan, and that all children are to be vaccinated before they reach the age of ten months. They must be revaccinated when they are six and again when they are twelve years of age.

Value of Glycerinized Vaccine Lymph. — Dr. Albert C. Barnes, of Philadelphia, has recently collected a large number of statistics regarding the various methods of vaccination and their efficacy. His conclusions are published in the *American Gynecological and Obstetrical Journal* for September, and are essentially as follow: He finds that when glycerinized lymph is used vaccination is successful in from 90 to 100 per cent. of primary cases and from 60 to 75 per cent. of secondary cases; that properly prepared glycerinized vaccine is pure and free from staphylococci, streptococci, and other pathogenic organisms; that glycerinized vaccine affords absolute protection against

small-pox; that vaccination with the glycerinized products does not cause excessive inflammation of the vaccinated area; that vaccine points are apt to lead to a false sense of security, inasmuch as they induce a local staphylococcic or streptococcic infection which is entirely distinct from true vaccination; that a high estimate of successful "takes" from vaccine points is by these and numerous other reports shown to be not over 60 per cent. in primary cases and a much lower percentage in secondary cases; that glycerinized vaccine has been officially adopted by the governments and health authorities of the United States, Great Britain, Germany, France, Russia and Belgium.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, October 4, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 80, scarlet fever 21, measles 2, typhoid fever 28.

Improved Facilities for Bowdoin Medical School. — The medical students of Bowdoin College will, according to *Science*, receive instruction during their last year at Portland, where suitable buildings are now being erected, and where they will have improved clinical facilities. After 1900 the course will be four years in length, the first two years being spent at Brunswick, and the second two years at Portland.

NEW YORK.

"Knock-Out" Drops. — A man was convicted in the Court of General Sessions on September 26th, before Recorder Goff, of having "knock-out drops" in his possession, and it is said that this is the first conviction of its kind in the New York criminal courts. Persons have been convicted who used such drops in assisting them to rob, but the convictions have all been on the robbery charge. The prisoner was first tried on the charge of robbing a man of $100 in a saloon, and the evidence being insufficient, he was acquitted, but as it was brought out at the trial that knock-out drops had been found in his possession, the recorder suggested to the district attorney's office that the case of Riallis be brought before the Grand Jury. This being done, the Grand Jury indicted him, and at the trial expert testimony was introduced, showing that the vial which he had contained chloral hydrate. The maximum penalty is ten years in State prison.

John H. Feuss, M.D. — On the transport *Burnside*, which arrived from Santiago on September 27th, was the body of Dr. John H. Feuss, acting assistant surgeon United States Army, a passenger on the steamer, who had committed suicide by shooting himself in the heart on the day previous. He was a contract surgeon who had been stationed at Brocadel'a Terra, and a letter which he left addressed to a New York physician indicated that he had brooded a great deal over certain alleged charges against him that he had suppressed knowledge that yellow fever had gained a foothold in that town, fearing that even if they were proved to be unfounded his reputation would be affected. On the steamer it was stated that he had complained of malarial trouble and appeared to be suffering from great mental depression. Dr. Feuss was thirty-five years old and a native of Bremen, Germany.

Dr. Francis A. Thomas. — Dr. Francis A. Thomas, who had practised for over forty years in the 19th Ward of New York City, died at the Presbyterian Hospital on September 28th from concussion of the brain, the result of being struck by a cable car two days previous. He was seventy-three years old and a native of Lewis County, N. Y. He was graduated from the College of Physicians and Surgeons, Columbia University, in 1853.

Correspondence.

[Special Correspondence.]

LETTER FROM PARIS.

The Status of Therapeutics in the Medical World in France.

Paris, September, 1899.

Mr. Editor: — The Paris Society of Therapeutics has at last publicly called attention to a question that for many years back has been slowly but steadily forcing its way to the front here: *the status of therapeutics in the medical world in France.*

At one of its meetings this spring a prominent practitioner in Paris entered a protest against the unintelligent way in which iodide of potash is administered by the generality of physicians in disorders of the circulatory system; he added that practitioners appeared to lack familiarity with many new remedies and methods of treatment, and finally proposed to the members of the Society that, as no one was better fitted than themselves for the purpose, they should take the initiative of drawing up and publishing a complete study of the principal remedies used in daily practice (about fifty in number, according to him), for the instruction and guidance of their *confrères*.

His remarks about the lack of therapeutic knowledge on the part of the average physician were immediately echoed, with still greater emphasis, it may be said, by the professor of materia medica at the Paris Faculty, who observed as follows:

"It must be admitted that the scandal of our times is the shameful ignorance shown by an infinite number of physicians concerning the real action of drugs. Although our practitioners are pretty fair clinicians, they are almost all unaware of the true properties of the remedies which they handle every day with extraordinary heedlessness."

The Society appears to have accepted this statement, and to have agreed with this description of the condition of affairs, as it lost no time in appointing a committee of three members to report on the most feasible plan of commencing work on this compendium of therapeutics to be issued under its sanction.

This is, I fancy, the first time such a work has been undertaken under similar circumstances, and I shall follow with the deepest interest the carrying out of the project by the members of the Society. Any one who has ever had occasion to look up a given drug in a series of authorities belonging to different countries has realized the enormous latitude existing between their opinions, and the fearful divergencies between their judgment as to its use in

a given disease; if to this we add the touchy nature of the members who will be gathered together to discuss the articles of the compendium, and the strong individual opinions that many of them hold on their few pet subjects and which nothing will compel them to relinquish, it is not easy at first sight to see how the work can possibly progress.

The fact of the matter is that the study of drugs, and of their application to the relief of disease, had fallen to a pretty low point in France. Profound skepticism was the universal order of the day. The student in the hospitals saw nothing but the half-dozen great specifics administered, when indicated, the other patients being treated by rest, diet, cataplasms, herb-teas, etc. Prescription writing was openly scoffed at in the wards, as will be seen from the following illustration. One of my former masters here, an excellent teacher so far as diagnosis went, remarked to us one day: "Gentlemen, when you are in practice, you will see that the point that will most impress a *confrère* is a correct diagnosis; the patient's family will be most impressed if your prognosis turns out correctly; but you yourself will be most impressed when your treatment is followed by any improvement that you think can fairly be ascribed to it."

At the Faculty of Medicine the lectures on materia medica and therapeutics were generally given by men who had no special training or taste for the subjects, but who had been appointed professors of those chairs because it happened to be their turn for a professorship, the consequence being that no one attended the lectures, which were non-obligatory. In the chairs of general medicine the chapter "Treatment," in each disease, was equally neglected. I personally once attended a course of lectures at the Faculty by a man who is now dead. He lectured for an hour three times a week for nearly two months on the subject Pneumonia, and then crowded his treatment into the last half-hour of the last lecture, whereas he had spent days on the pathological anatomy alone.

It is furthermore a noteworthy fact that there does not exist a single good work on materia medica and therapeutics by a French author.

The result of such training was that when the students came to their final examinations, their knowledge of these branches was practically *nil*. A French friend of mine who had to pass in materia medica and therapeutics this spring — an examination, which, like all the others, is oral in France — told me that of the nine candidates that day, not one could give the examiners any information whatever about sulphonal, and appeared to think that they had been very hardly used in getting such a question.

But when they finally became doctors, the therapeutic skepticism, which was their most cherished article of faith, received a severe blow, as they found their patients anything but disposed to put up with that sort of ideas. Useful or not useful, the French patient requires his physician to give him medicine of some sort to take; and if he does not get it from one man, he simply sends for some other physician. The young doctor, then, knowing nothing whatever of that branch, was obliged to resort to one of two expedients: he either hurriedly learnt by heart a certain number of prescriptions in one of the many wretched formularies that crowd the shelves of the medical booksellers, or else he set to work to prescribe proprietary medicines, of which he had a countless number at his disposal.

From what I have observed I should say that the former plan was the one usually followed at the beginning of a medical career. Later on, many men tried a little formula-writing on their own account, but promptly found themselves in a most humiliating position. Ignorant of the action, doses, form, solubility, etc., of many of their remedies, it was not long before shameful errors appeared in their prescriptions, for which they were openly derided by the druggist; they also soon felt the risk connected with prescribing syrups, tinctures, etc., without a definite idea of the amount of active principle represented by a given dose.

This became disheartening after a while. The steadily increasing demands of a practice on their time prevented their taking up the question from the beginning and really mastering it, so the final stage in their career was marked by the lax habit of prescribing proprietary medicines — X's Syrup, or Y's Pills; "an excellent preparation; you will find full directions on the wrapper." This was so easy and saved such a lot of time!

My readers would have great difficulty in grasping the extent to which this ordering of "specialties," as they are called, has been carried in France. The most eminent Paris consulting physicians do it, men known all over the world for their scientific worth, and men who possess all the honors France can confer.

I have before me two written consultations with one of the leading professors of the Faculty, a physician of great and just repute. They both cover three sides of ordinary letter paper, and are subdivided into *primo*, *secundo*, etc. They read as follows:

For Mrs. D.

1° Diet.
2° Proprietary medicine.
3° Written formula.
4° Two proprietary medicines.
5° Proprietary medicine for external use.
6° Two proprietary medicines.
7° General directions.

For Mrs. W.

1° Proprietary medicine.
2° Proprietary medicine.
3° Proprietary medicine.
4° Written formula, but into which enters a proprietary medicine.
5° Written formula.
6° Climate.

There is no man in Paris of better standing than the writer of these two prescriptions; so if the leaders err in this fashion, it is not a matter of surprise that the rank and file follow suit.

It must not be supposed that Paris has had absolutely no exponents of the art of handling drugs. We have had, of late years, two men who have been pre-eminent in this branch, both of whom have written or edited voluminous though poor treatises on the subject. There is, however, little doubt but that their therapeutic proclivities were distinctly harmful to their professional standing with their *confrères*, by whom they were commonly termed "polypharmacists," — a most derogatory term in France, — and neither of them attained the high official positions in the profession to which their talents might have warranted their aspiring. One of them, by the way, is the author of a very neat shot fired into the ranks of the therapeutic unbelievers. In speaking of the mistake it is in face of disease to fold one's hands and do nothing, he remarks: "Le doute élevé à la hauteur d'un principe ne va jamais sans une réelle ignorance!"

There is also in France a peculiar feature in medical life that has unquestionably deterred many, who might otherwise have been led to do so, from writing on questions of therapeutics. The druggists are constantly on the lookout for new remedies to put up in the form of proprietary medicines. The moment a man publishes anything in this line, some druggist pounces upon it, prepares the stuff wholesale, calls it Dr. X's, cites the author's article on the cover, and puts his name in the advertisement he inserts in all the daily papers. You see at once the poor physician's predicament and the light he can be placed in. The curious part of the affair is that, according to the institution the French call Law, the physician has absolutely no redress against the druggist who has put him in such a plight. Many of my readers may remember the pharmaceutical orgies that took place after the first papers were read at the Academy of Medicine on the action of glycerophosphates.

Such, in brief, has been the state of matters in therapeutics in France. For some time past the medical world has been realizing that something would have to be done, and curiously enough it is the druggists who are in a large measure responsible for the "revival" that is now taking place. They claim that in the "specialties" the only man who makes a profit is A, the maker of the "specialty"; that B, who sells A's preparation when ordered, makes nothing

like as much as though that prescription had contained a written formula that he could have made up out of the original drugs. They, therefore, have been calling attention to all this "specialty" traffic in the hopes of putting a stop to it.

Physicians have also observed two other points. Many patients, when given a "specialty" which they have seen advertised in their daily paper, say to themselves: "It was not really worth while to pay that doctor a fee for something I could just as well have got from my own paper." The second point is, that when a friend of theirs complains of feeling seedy, instead of telling him to see a doctor, they prescribe the "specialty" on their own authority, so that the medical man has probably lost a whole series of patients by his ignorance.

Finally, many men feel that this reliance on the "specialty" puts them in a humiliating light, and that future generations of physicians ought to be better equipped than they were when they left the schools of medicine. This feeling is meeting with a response at the Faculty here, where the severity at the examinations is being slowly, but steadily, increased. It was about time!

In closing this letter I should like to refer to another recent occurrence at the meetings of the Society of Therapeutics. A proposal was made to elect a certain number of foreign correspondents *honoris causâ*, and a list of thirty-two men, representing twelve different countries, was drawn up, presented to the Society and adopted by the members. In this list England, Germany, and other leading countries are worthily represented by Lauder Brunton, Leyden, etc.; and then come Norway, Belgium, Spain, Russia (seven names!) etc., represented by men whose fame, I humbly confess, had not reached my ears. The United States appears to possess no therapeutist of eminence, at least we have not the honor of being included in the Society's list, not even by the side of little Portugal, which country (two representatives) was added to the original list at a subsequent meeting, in order, presumably, to make it complete.

SPECTATOR.

GENERAL WOOD'S REPORT ON PROVINCES OF SANTA CLARA AND SANTIAGO, CUBA.

WASHINGTON, September 23, 1899.

MR. EDITOR: — A very interesting report from Gen. Leonard Wood, commanding the Provinces of Santa Clara and Santiago, Cuba, has just been received at the War Department. This report is dated Cristo, Cuba, August 9, 1899, and covers the year of occupation by United States troops. The report says, in part:

"During the period between August 10th, the date of the formation of the department, and August 25th, the date of sailing of the last of the Fifth Army Corps, the conditions existing in and about the city of Santiago were serious in the extreme. The prostrating effects of the siege were showing themselves plainly on the population, who were dying at the rate of 180 a day. The city was full of sick people, there being hardly a house which did not contain one or more persons suffering from disease. There was a large number of the Fifth Army Corps sick, and field hospitals practically surrounded the city. The water main, which had been partially destroyed during the siege, had not been placed in complete repair and there was a great shortage of water. In addition to our own troops and civilians there were some 12,000 Spanish prisoners, who had nearly 4,000 sick. All these conditions rendered the service of the new troops very trying and the difficulties of supplying and taking care of them became very great."

Referring to the Second United States Volunteer Infantry General Wood says:

"At the time this regiment was sent to Holguin a great epidemic of small-pox was raging in and around that city and the work they were called upon to perform was arduous and dangerous. Military quarantine and isolation hospitals were established. These and other measures, under the intelligent supervision of Colonel Hood, assisted by Dr. R. S. Woodson, United States Army, and Dr. Felipe Veranes, quickly and effectually checked the epidemic and in a short time resulted in its entire subsidence. In connection with this it may be interesting to state, as an illustration of the efficiency of vaccination that this regiment was sent into a district reported to have 9,000 cases of small-pox, 3,000 of which were of a virulent type. The men had all been twice vaccinated and they went safely through the epidemic without a single case occurring in the regiment, although in the performance of their duties they were thrown in constant contact with the people of the infected villages. So complete was the infection that many houses had to be burned. The exact loss of life among the natives will never be known, but it must have amounted to a thousand or more."

General Wood recommends that recruits and officers for Cuban service be sent to the island only during November, December and January, to thus favor acclimatization before the sickly season. He is averse to having officers sent out for duty who are more than fifty years old, as they do not well withstand the effects of the climate. Of the improvements relating to the sanitary condition of Santiago he says:

"We have doubled the water supply, reduced the death-rate, in comparison with former years, fully 50 per cent. Five miles of first-class asphalt streets have been built and curbed with either concrete or bluestone curbing. The same amount of macadam streets have been constructed and in all that portion of these streets constructed in the city proper a thoroughly modern sewerage and water system has been laid, so that, when means are available to complete and put in operation throughout the entire city, it will not be necessary to tear up these newly-constructed pavements.

Extensive and complete surveys have been and are being made in view of submitting a plan for greatly increasing the water supply; which, although double what it formerly was, is barely a fifth of what is needed — and until this supply is procured we cannot put into successful operation a modern sewerage system, nor shall we have water for flushing and cleaning the streets."

A complete sanitary department has been organized and equipped with modern appliances. The work done by this department has been excellent. A sea wall has been built along a large section of the water front and the old sewerage flats have been dredged out and dumped outside of Morro. Extensive fillings have been made in the low swampy lands near the city. An emergency hospital has been established and equipped. The jail, city market and slaughter house have been renovated and repaired. The civil and military (Spanish) hospitals have been renovated and outfitted with modern appliances and furniture. A large ice plant has been installed and is successfully operated. An extensive intercepting sewer will soon be commenced and disinfecting and settling basins constructed. This will completely free the harbor from contamination by means of the present sewers.

General Wood recommends that all troops be withdrawn from seacoast towns known to be infected with yellow fever and quartered in light, airy barracks of wood raised well off the ground, with double roof and wide verandas. These buildings should be cheaply constructed and placed at points, if possible, at least 1,000 feet above the sea. He says:

"We have found it (yellow fever) to be a disease of the towns, developing in damp masonry buildings with earthen and masonry floors; that the points of infection are in the towns themselves and that any amount of precaution will not prevent infection of barracks and hospitals which are situated in these old towns. We have found also that it is a disease which can be most readily checked by isolation, sanitation, sunshine and plenty of fresh air. The inference is that we should send all troops away from towns known to be, or to have been, infected and put them in light, well-ventilated barracks, on the most elevated ground

available. Under such circumstances we can deal with the disease under circumstances most advantageous to ourselves and with the best prospect of success. If our barracks do become seriously infected they can be burned and rebuilt for less than it costs to disinfect and rehabilitate the masonry structures turned over to us by the Spaniards. Hospitals should be constructed on the same plan and located at points hitherto uninfected. The buildings should be small, numerous, well separated from each other and well raised from the ground. By following this plan, if a building becomes infected it is only a small one and can easily be dealt with or destroyed, if necessary, without great loss. There are no towns in this department near which suitable locations cannot be found; locations which are both safe from a sanitary standpoint and suitable from a military one. If we can avoid yellow fever we shall have no difficulty in maintaining our troops here in good health."

General Wood recommends khaki as the military uniform but criticises the quality of that issued. A brown helmet is suggested as a head dress and the combination of white forage cap, blue blouse and white trousers as a full-dress uniform. Pommel slickers for the use of mounted troops are highly praised. The present ration appears to be ample. Over-eating is to be avoided and abstinence from alcoholics is to be insisted on. The refrigerated beef is satisfactory and much to be preferred to native beef. The report concludes, in the usual manner, with commendation of the work of individual members of the staff. Altogether the report is unique, showing, as it does, what may be accomplished, in the face of untried conditions and much passive opposition, by the combination of personal force of character, a professional training and full executive authority.

EFFECTS OF TRAINING.

WASHINGTON, September, 1899.

MR. EDITOR: — Long professional observation of physical training, with actual personal experience in athletics and the holding of several records, of which modesty alone prevents the mention, must be my apology for saying that the articles by Dr. Darling, in your late issue, August 31st-September 7th, relative to the training of the Harvard crews, have been read with more than pleasurable interest. Dr. Darling assuredly deserves credit for the able investigation and study he has brought to bear upon a timely and popular subject that heretofore has been discussed either by athletes who knew nothing of medicine or by physicians having no practical or personal knowledge of athletics. The resulting conclusions from such divergent points of view, as many of us know, were consequently variable and of little worth. Happily such crude and conflicting views, no longer arbitrary constants, are less prevalent nowadays, since many of our intelligent physicians are not only fine athletes but have done much to break up obsolescent error and to spread sounder knowledge of physical training.

Among the details that strike one in reading Dr. Darling's study, it is quite possible to agree with him on the point that the effects of training on the heart and kidneys in particular may approach unpleasantly near pathological condition, and this is all the more evident when training has been injudicious, as we know much of it to be.

To avoid the ill effects of training and to get the best results, Dr. Darling's first suggestion as to preliminary work might be supplemented and emphasized by insisting upon graduated work; for the ambition of most of our young athletes is to exceed their powers by trying to carry the ox before lifting the calf.

As to nourishment, it is generally known that prevailing notions as to proper food for athletes have greatly changed for the better when compared with those that obtained among trainers several years ago. There is still much room for improvement, and the recognition of individual preferences as to diet suggest to the reflective mind that Mr. James Corbett is quite right in asserting that he eats and drinks what he likes when training, his object being to build himself up and to make himself "feel good," and that in consequence he always gains weight. It appears that in the dietary of the Harvard crew "no tea or coffee was allowed," and that "a dish of calves'-foot jelly with sherry" was given each man during the last week after the morning row. The benefits of this dish are, to say the least, problematical, and the prohibition of coffee is still more doubtful. Not to enter upon a mootable subject, I have found in common with many others that coffee in moderation is of great benefit in training. Naval officers tell me that the reason why our sailors always beat the British at rowing races is because our men drink coffee, while the British man-o'-warsman drinks cocoa. A considerable experience with the United States Army, as well as two Arctic expeditions, convince me of the salutary physical effect of coffee. Wood-choppers have been known to work effectively for weeks on a diet mostly of cornmeal and coffee without milk. Some years ago, I was never in better condition than when sojourning temporarily at a farmhouse, with an improvised gymnasium in the backyard, where I lived on a diet of bacon, a few vegetables and coffee. In reciting the virtues of coffee, I but repeat the concurrent testimony of many experienced and competent observers, all of whom believe it to be a mistake to withhold the moderate use of what is physiologically a permanent and diffusible stimulant of much value when great muscular effort and nervous fatigue are to be undergone, especially in a climate so capricious as ours.

The third point in Dr. Darling's suggestions as to providing variety of exercise is, perhaps, his most valuable one as regards training for a rowing contest. Much practice in a boat is naturally called for when training for a race; but this monotonous exercise should be varied with running and swimming. The judicious interpolation of these two exercises will greatly improve both mind and digestion and put the system in better condition to escape the possible ill effect of high arterial tension. I am aware that most trainers object to swimming as an adjunct to rowing; but what should we think of a trainer with so little notion of harmonious essentials as to allow a boxer no other exercise than that obtained from the gloves? The swimming of race horses may also be mentioned in this connection as part of the training. But I am often told by rowing men that swimming weakens and causes loss of weight. This belief is contrary to the experience of myself and of others. I have done a great deal of rowing, and nothing gets me in better trim for that exercise than to alternate this with the sport of swimming. Moreover, a course of swimming always increases my weight. This was notably so two years ago, when I gained four pounds a month for three months, notwithstanding what some might consider an excessive swim every afternoon in the Potomac River. On another occasion, during an outing at Fort Monroe, the increased assimilation of food incident to swimming caused me to gain ten pounds in ten days. In addition to others with similar experiences, I may cite the case of a medical friend in Washington, who has besides improved his rowing at least fifty per cent., which he attributes to improved condition brought about by swimming. Indeed, I feel so convinced of the utility of introducing variety of exercise and sports as an adjuvant means during training for a rowing contest that given two crews of equal capacity at the outset of training the one trained by my method of alternate exercise would win every time.

There is yet another hint of great value that is generally unobserved. When the men have been trained up to a high key it is wrong to keep them hard at work till the day of the race. In every respect, physically and mentally, they will be more fit if allowed almost complete rest for two or three days before the race. This will contribute largely to that state of euphory, or sense of well-being, so characteristic of perfect training, and will put the men in the best cue to seize the psychological moment that falls to the victor in every contest.

Very truly yours,

IRVING C. ROSSE, M.D.

METEOROLOGICAL RECORD

For the week ending September 23d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
S...17	30.27	64	77	52	60	74	67	S.W.	S.W.	8	13	C.	C.	
M..18	30.12	68	80	57	74	81	79	W.	S.W.	10	20	C.	C.	
T...19	30.05	72	82	63	81	83	82	S.W.	S.W.	12	12	F.	O.	
W..20	29.77	65	68	62	100	81	90	N.E.	N.W.	26	10	R.	C.	2.82
T...21	29.87	64	73	54	87	89	88	W.	W.	8	12	O.	C.	.21
F...22	30.05	62	73	50	74	75	74	S.W.	S.W.	10	12	C.	C.	
S...23	30.32	54	59	50	69	62	66	N.	S.E.	14	8	O.	C.	

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat enings; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 23, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1154	478	15.57	11.52	7.74	1.71	2.88
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	211	81	12.69	7.99	4.70	1.88	4.70
Baltimore	506,389	179	69	16.80	11.76	11.76	1.68	2.80
Cincinnati	405,000	85	—	3.54	1.18	3.54	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	84	30	27.37	13.09	15 47	5 95	3.57
Washington	277,000	118	40	25.50	14.45	8.50	5.95	7.65
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	40	13	17.50	12.50	15.00	—	2.5
Nashville	87,754	29	12	30.72	7.68	12.80	2.56	7.68
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	39	23	—	—	—	—	—
Fall River	95,919	31	22	22.61	6.46	19.38	3.23	—
Cambridge	89,724	21	9	19 04	14.28	14.28	—	4.76
Lowell	88,641	25	12	28.00	—	24.00	—	—
Lynn	66,703	17	—	11.76	—	5.88	—	—
New Bedford	66,340	26	13	11.15	11.15	11.15	—	—
Somerville	68,101	21	5	9.52	4.76	—	4.76	—
Lawrence	57,263	23	20	21.75	8.70	13.05	—	4.35
Springfield	56,501	12	5	8.33	8.33	—	—	8.33
Holyoke	43,424	19	11	21.04	—	21.04	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	16	5	6.25	6.25	6.25	—	—
Malden	34,613	7	3	28.56	—	14.28	14.28	—
Chelsea	33,468	14	3	7.14	14.28	7.14	—	—
Haverhill	32,022	12	4	8.33	—	—	—	—
Gloucester	30,589	5	2	—	40.00	—	—	—
Newton	29,716	5	2	20.00	—	20.00	—	—
Fitchburg	29,438	6	2	16.66	—	—	—	—
Taunton	28,167	16	4	37.25	6.25	18.75	6.25	—
Everett	25,338	6	2	16.66	16.66	—	—	16.66
Quincy	23,549	4	4	50.00	25.00	50.00	—	—
Pittsfield	22,643	7	1	14.28	14.28	14.28	—	—
Waltham	22,296	4	3	—	—	—	—	—
North Adams	20,871	7	3	—	—	—	—	—
Chicopee	17,842	9	6	33.33	11.11	22.22	—	—
Medford	16,511	4	3	25.00	—	25.00	—	—
Newburyport	14,915	6	3	—	—	—	—	—
Melrose	14,032	2	—	50.00	50.00	—	50.00	—

Deaths reported 2,276; under five years of age 857; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 360, consumption 227, acute lung diseases 201, diarrheal diseases 186, diphtheria and croup 68, typhoid fever 49, whooping-cough 26, cerebro-spinal meningitis 16, measles 8, scarlet fever 6.

From scarlet fever New York 4, Providence and Washington 1 each. From whooping-cough New York 15, Boston and Washington 2 each, Baltimore, Pittsburg, Lowell, Lawrence, Taunton and Chicopee 1 each. From cerebro-spinal meningitis New York 9, Worcester 2, Boston, Washington, Lynn, Somerville and Fitchburg 1 each. From measles New York 7, Worcester 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 16th, the death-rate was 21.1. Deaths reported 4,617; acute diseases of the respiratory organs (London) 133, diarrhea 931, diphtheria 69, fever 61, whooping-cough 55, measles 39, scarlet fever 27, small-pox (Hull) 3.

The death-rates ranged from 13.5 in Croydon to 32.5 in Salford; Birmingham 25.2, Bradford 19.6, Cardiff 16.8, Gateshead 25.9, Huddersfield 17.6, Leeds 18.1, Liverpool 30.9, London 18.8, Manchester 26.2, Newcastle-on-Tyne 24.9, Nottingham 21.8, Portsmouth 18.6, Sunderland 29.4, West Ham 19.3.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 30, 1899.

C. E. RIGGS, passed assistant surgeon, detached from the "New York" and ordered home to wait orders.

E. S. BOGERT, passed assistant surgeon, ordered to the "New York," October 3d.

C. P. KINDLEBERGER, passed assistant surgeon, detached from the Philadelphia Naval Hospital and ordered to the "Iowa."

M. S. GUEST, passed assistant surgeon, detached from the "Wabash" and ordered to the Philadelphia Naval Hospital.

E. P. CRANDALL, passed assistant surgeon, detached from the "Iowa," and upon relief to proceed home and wait orders.

D. L. WRIGHT, assistant surgeon, ordered to additional duty on board the "Monterey."

T. A. BERRYHILL, surgeon, detached from the "Panther" when out of commission and ordered to the "Monongahela."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING SEPTEMBER 28, 1899.

MEAD, F. W., surgeon. Granted leave of absence for two days. September 28, 1899.

BLUE, RUPERT, passed assistant surgeon. Granted leave of absence for one month and eight days from October 6th. September 25, 1899.

TABB, S. R., assistant surgeon. To proceed immediately to South Atlantic Quarantine for temporary duty. September 23, 1899.

VON EZDORF, R. H., assistant surgeon. To proceed to Miami, Fla., for special temporary duty. September 25, 1899.

BILLINGS, W. C., assistant surgeon. Relieved from duty at New York, N. Y., and directed to report in person at the Bureau for temporary duty in charge of the Miscellaneous Division. September 28, 1899.

BAILEY, C. W., acting assistant surgeon. Granted five days' leave of absence. September 25, 1899.

WALKLEY, W. S., acting assistant surgeon. Granted leave of absence for four days. September 28, 1899.

COMFORT, N. C., hospital steward. To report at Bureau for orders. September 23, 1899. To proceed immediately to New York, N. Y., and report to Passed Assistant Surgeon H. D. GEDDINGS for assignment to duty in charge of the steamer "Wapiti" on her voyage from New York to Florida. September 25, 1899.

SOCIETY NOTICE.

MEDICAL SOCIETY OF VIRGINIA. — Thirtieth annual session of this Society will be held in the Roof Garden of "The Jefferson" Hotel, Richmond, Va., October 24, 25 and 26, 1899.

BOOKS AND PAMPHLETS RECEIVED.

Anæsthesia: Nitrous Oxide; Ether; Chloroform. By S. Ormond Goldan, M.D. Reprint. 1899.

Asepsis in Country and Private Practice: A New Sterilizer. By Hamilton Fish, M.D., Ouray, Colo. Reprint. 1899.

Involvement of the Eye and Ear in Cerebro-spinal Meningitis. By William Cheatham, M.D., Louisville, Ky. Reprint. 1899.

Case of Papilloma of the Ovary. The Conservative Treatment of the Myomatous Uterus. The Intrauterine Application of Chlorid of Zinc. Secondary Abdominal Pregnancy after Traumatic Rupture of the Uterus in the Fourth Month; Laparotomy; Recovery. The Bacteria Occurring in the Female Genital Canal and their Relation to Endometritis. The Opening of the New Lakeside Hospital. The Influence of Extirpation of the Ovaries upon Structural Changes in the Uterus. Irrigation with Salt Solution and Other Fluids in Surgical Practice. Infection after Abdominal Operations and its Treatment. The Treatment of Retrodisplacements of the Uterus. A Case of Endothelioma Lymphangiomatodes of the Cervix Uteri. By Hunter Robb, M.D., Cleveland, O. Reprints. 1897–98.

Original Articles.

THE EROSIONS OF THE CERVIX UTERI.[1]

BY F. H. DAVENPORT, M.D., BOSTON.

This may seem a trivial affection to be the subject of a paper before this Section, and in one sense it is. There are only two considerations which have induced me to choose it, one of which is my conviction that its importance has been underestimated, the other that I personally, and perhaps it may be true of the profession at large, know very little of its true significance and am often in doubt how to treat it. It is with the idea of contributing something to our knowledge of the symptomatology of the affection, and also with the hope that I may get some light on its treatment, that I present this paper.

First, as to the normal structure of the cervix. Even here pathologists are not in accord on all points, but the main general facts may be thus briefly stated: On the vaginal surface there is pavement epithelium covering and bridging over the papillæ. As we approach the os uteri, the epithelial layer grows thinner, and the papillæ become more prominent and the line of junction between the pavement epithelium and the cylinder epithelium lining the cervical canal often forms a distinct ridge, which was called the "hymen uterinus" by Künecke.[2] It is held by more recent observers that the change from one variety of epithelium to the other does not, even in normal uteri, occur always at a fixed point, but may take place anywhere from the os uteri to a point about a third of the distance up the canal.

Underlying the epithelial layer is elastic connective tissue, the fibres of which are intimately woven with the subjacent muscular fibres. From the larger arterial branches[3] numerous small vertical arterioles run towards the surface, and a capillary network surrounds each papilla.

The question as to whether glands are normally found on the vaginal surface of the cervix has been the subject of a good deal of controversy, and different observers hold quite divergent views. Wagner[4] found them throughout the whole of the cervix. Wedl[5] and Kolliker[6] did not find them in the neighborhood of the os externum. Friedländer[7] and Lott[8] found none below the arbor vitæ. Henle questions whether Wagner had not confounded the arterioles with the glands.

Klotz,[9] as the result of the examination of thirty cervices, comes to the conclusion that there are two extreme types of normal cervix, one without glands, and with the pavement epithelium extending high up in the cervix, the other rich in glands, with regular arrangement of the blood-vessels, and the pavement epithelium ceasing low down in the cervix. Between these there is every intermediate form. The intermediate forms were the most frequent, and those rich in glands less frequent than those without.

Ruge and Veit[10] doubt the occurrence of glands on the normal cervix, and consider that when found they are part of a pathological process.

Landau and Abel[11] show that at some time in fetal life the whole genital tract is covered with cylinder epithelium, which gradually changes in the vagina into the pavement variety. Sometimes this fails to be completed before birth, and we have the so-called congenital erosion. They believe that, without any irritating cause, cylinder epithelium may occur on the vaginal portion, either as a continuous ring around the os externum, or even in isolated patches. They are of the opinion that glands do not occur on the vaginal surface of normal cervices, but that cysts and follicles may, and that these may have been mistaken by other observers for true glands.

The changes which are found in erosions, and the method of their production, are variously explained. Klotz describes one form occurring principally in those cervices which are poor in glands, where there is merely an absence of the epithelium, and the free exposure of the papillæ. More common is the form which he calls glandular excrescence, where portions of the gland wall project into the cavity of the gland, and gradually emerge from the orifice in the shape of little reddish points. The accompanying swelling may easily lead to ectropion.

Fischel[12] describes three forms. From some injury, mechanical or chemical, or from some internal cause, a swelling of the mucous membrane occurs. The horny layer becomes thinner, the projections between the papillæ disappear, a large prominent papilla is formed, at the summit broken through and red, what I should call a granular erosion. As a second form, he describes those called by Klotz glandular excrescence, where portions of the gland wall project into the cavity of the gland. If the orifice becomes occluded, we have retention cysts, ovula Nabothi; when the cyst walls break down, follicular ulcerations. This form of erosion he calls adenomatous. The papillary erosion, which he describes as a third form, takes its origin in the glands of the cervix, or of the vaginal portion, usually accompanies ectropion, and may very possibly be a source of epithelioma.

Ruge and Veit explain all forms of so-called erosion or ulceration as different stages of one process. Any irritation affects first the cells of the rete Malpighi, they become larger and softer, and the pavement epithelium gradually disappears, leaving the surface covered with cylinder epithelium. This begins to grow down into the subjacent layers, at first solid, then hollow, forming the canals and follicles. In other words, there is a real new gland formation, proceeding from the rete Malpighi itself.

Landau and Abel say that the pathological changes in erosions consist, in their simplest forms, of small-cell infiltration of the stroma, and a thinning of the layer of pavement epithelium, the so-called simple erosion. In a second form the stroma is studded with follicles or crypts, the surface thrown into folds and covered with cylinder epithelium. If glands are found, they are a direct continuation of the cervical glands, and occur only near the os externum.

So much for the histological and anatomical explanation of so-called erosions. The attempt to divide the forms according to the minute histological characteristics seems to result in so much confu-

[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, March 22, 1899.
[2] Die vier Factoren der Geburt, Berlin, 1859, p. 165.
[3] Henle: Anatomie, ii, p. 163.
[4] Arch. f. Phys. Heilk., 1856, p. 504.
[5] Grundz. d. Path. Hist., 1854, p. 500.
[6] Microscop. Anat., 1855, p. 446.
[7] Physiolog. Untersuch. über den Uterus. 1870, p. 43-49.
[8] Anat. und Physiolog. d. Cervix Uteri, 1872, p. 13.
[9] Veränder. an Port. Vag., 1879.
[10] Zeit für Geb. und Gyn., Band ii, p. 415.
[11] Archiv für Gyn., 1890.
[12] Ein Beitrag zur Histol. der Erosionen der Port. Vag. Uteri. Archiv für Gyn., Band xv.

sion, and to lead one so far, that for practical purposes I prefer a simpler division. Clinically I meet with two forms, one associated with and following endocervicitis, the other not. In the first form the inflammation of the lining membrane of the cervical canal is the primary factor. The erosion develops later. It is at first perhaps an ectropion, a hypertrophy and prolapse of the cervical mucous membrane, a condition which I am sure is often mistaken for erosion. But if the process stops here no erosion occurs, and in many cases it is so limited. Under treatment the hypertrophied and congested membrane shrinks and is withdrawn into the cervical canal. In some cases however an erosion develops. Surrounding the ectropion is a zone of red, angry looking tissue, dotted here and there with bright red points, slightly raised above the level of the cervix and covering a space from the size of a dime to a quarter of a dollar. The essential factor which characterizes this class of cases is the antecedent and accompanying endocervicitis. This is clearly demonstrated by the history and by the appearance on examination.

The second form of erosion that we find clinically differs from the one I have described in that so far as the appearances are concerned there is no endocervicitis. The patient does not complain of any discharge, nor on examination can any amount of mucus be seen coming from the cervix. The erosion does not differ from the first form except that it is apt to be more angry looking and the papillæ are more prominent. In my experience it has been more often associated with an anteflexion of the uterus where there is a conical cervix than is the first variety. The patients are apt to be of a neurotic type, or else those who have recently been under an unusual nervous strain. If I may generalize from a moderate number of cases, I should say that the symptoms were more distinctly general in character than local; not that there are no local symptoms, but that they are overshadowed by those general in character, which are also largely reflex. It would follow as a corollary of this proposition that the essential factor back of this form of erosion is the state of the general health, and this I conceive to be the case. The first form is secondary to a pre-existent disease of the cervical canal. The second form is associated with a condition of the vital forces and is in many cases an index of the state of the health of the patient.

On examination we are apt to find a general hyperesthesia of the pelvic organs; the examining finger will cause pain when pressure is made upon the cervix or in either of the culs-de-sac, and that pain will sometimes last for hours after such examination has been made. Moderate pressure seems to cause as much disturbance as deeper pressure, nor can the examiner detect that any particular organ is more sensitive than another. Any treatment, however simple, is followed by a feeling of distress or actual pain, which may last for some time. This condition of extreme sensitiveness varies at different times. The examination may be one day excessively painful and at another time comparatively painless. The time of the month seems to have a certain bearing upon this affection. As the menstrual period approaches, and the pelvic organs become more congested, there is apt to be more pain. So, too, at the middle of the intermenstrual period there is a day or two when the symptoms are aggravated and, in passing, I may say that I believe close questioning of our patients will reveal a much more general occurrence of symptoms at the intermenstrual epoch.

The local symptoms of both forms are, in the first place, backache (which I am of the opinion holds a very definite relation to any affection of the cervix uteri), and, in the second place, a feeling of irritation low down in the pelvis without differentiation on the part of the patient, and which cannot be accurately located by her. These are almost the only local symptoms of which the patient will make complaint. Of course, in the first form we have in addition the symptoms which are characteristic of the accompanying endocervicitis.

The general symptoms vary greatly with the individual; it would be impossible to enumerate them in detail here, and it is hardly necessary, inasmuch as it is not claimed that they are directly the result of the erosion, but merely associated with it. They are the Protean forms of neurasthenia or poorly regulated nerve action, as shown in head symptoms — headache and neuralgia, trouble with the eyes, impaired mental activity, symptoms referable to the digestive system, or those associated with circulatory disturbances. The sequence of events is often the following: The patient becomes run down nervously from some overstrain or overwork and at varying length of time there will begin to be local disturbances. On examination the only pelvic pathological condition found will be an erosion. The question then arises what bearing the erosion has upon the general condition of the patient, and what should be our course of treatment. This brings us to the question of the treatment of erosions in general. As regards the first form, that associated with an inflammation of the lining membrane of the cervix, the most natural course would be to direct our efforts to the care of the initial lesion, namely, endocervicitis. As will be very well recognized by all of you who have had any experience in gynecological work, this is by no means so easy as it sounds. The milder forms of treatment which have been recommended ever since there was any attempt at the treatment of these affections will prove in the majority of cases of little avail. Applications to the diseased surface of iodine or the stronger mixtures, or even carbolic or nitric acid, will often leave one in the lurch. Even curetting will ofttimes prove of very little value; still this is the most effectual means that we have at present, and where it is possible this more heroic form of treatment should be employed. Sometimes with the cure of the endocervicitis the erosion will disappear; again it will persist even though the cervical canal is made healthy. For such obstinate cases I have a method of treatment to propose, which also applies to the next class, and which I will describe later.

The history of the second class leads naturally to the proposition that, inasmuch as this form is either secondary to, or intimately associated with, the condition of the nervous system generally, our measures of relief should be directed to the building up of the nerves, with the expectation that with an improved condition of the nervous system the local lesion will improve as well. This does not always follow. It must have been within the experience of you all to have had cases where an affection which was clearly secondary in its appearance, assumed so much importance in the production and keeping up of symp-

toms, that it either overshadowed the primary affection or completely neutralized the attempts at building up the general health. I have seen this follow other gynecological affections, such as laceration of the cervix or of the perineum, which remained dormant as regards symptoms for a number of years, and then, with a deterioration of the general health, caused so many local and general symptoms, that only after its repair could a fair start be made towards the restoration of the nervous system. This, I am sure, is what often happens in these cases. Erosions slight in appearance will yet at times assume an importance which imperatively demands that they should be relieved, before any permanent state of health can be attained. For this reason all cases must be carefully analyzed. In a certain proportion the local treatment may be omitted entirely. If the general health is looked after the erosion will keep pace with the improvement of the nervous system and will gradually disappear. Another contingent of cases will demand local treatment. I must confess to a feeling of skepticism, of almost hopelessness, as regards the effect of local applications on these erosions of the neurotic type, if I may so call them. Iodine, various powders, such as oleate of zinc, ichthyol, antiseptic washes, glycerin tampons, have all, at times, proved useless in my hands. Perhaps the one remedy which has given me the best results is a weak solution of nitrate of silver painted over the surface of the diseased membrane. A solution of nitrate of silver, from five to fifteen grains to the ounce, according to the sensitiveness, seems to me not only to promote healing but to have at the same time a benumbing effect upon the pain. In these cases I avoid the use of the glycerin tampon, which seems to me a little harsh. Many cases, however, will fail to be improved by these applications, and for these I am more and more inclined to perform a simple operation.

All of you have undoubtedly seen cases of erosion where there was a good deal of hypertrophy of one or both lips, which so nearly simulated a laceration of the cervix that only the absence of any history of pregnancy made the diagnosis sure. The natural thought in considering treatment for such cases is to operate as for a laceration, and a number of cases are on record where this has been done. I have seen several such cases myself and it seems to me that this principle might be extended further so as to embrace a large number of cases, even those without much hypertrophy. A thin layer of the diseased mucous membrane can be removed from the cervix without any great loss of tissue, and the raw surfaces united so as to restore the vaginal surface of the neck of the uterus to its natural state. It is a simple operation and, in my judgment, and I think in the opinion of many patients, a preferable course to weeks or months of uncertain local applications. I have done this several times and the results have been very gratifying. Even this, however, is no safeguard against a return of the trouble, as was demonstrated to me by a case in my own practice. I had a patient who had been under my care for several years with a simple misplacement of the uterus. After a period of unusual nervous strain she complained of certain indefinite symptoms of irritation and discomfort in the region of the womb, and on examination I found an erosion. There was a certain amount of hypertrophy, and I operated as for a lacerated cervix. There was an immediate cessation of the nervous symptoms — a state of things which lasted for about two years. She then returned to me saying that from her symptoms she felt sure that there had been a return of the trouble, which on examination I found to be the case. A second trachelorrhaphy was performed, and the patient since then, now five years, has remained free from symptoms.

It will be seen from what I have said, that my experience with minor forms of treatment for erosions of the cervix has led me to be rather pessimistic as to their value. At the same time, it will be recognized from what I have said that I do not consider them the innocent or simple affairs which many I am sure do. I believe that they have a marked influence upon the nervous system of delicate women, and that something should be done for their relief. In order to attain better results than I can by applications, and in many cases by attention to the general health, I am more and more inclined to treat these cases by operation.

I shall gladly welcome any suggestions from others who have been able in simpler ways and more frequently to cure these troublesome afflictions.

THE TREATMENT OF CEREBRAL TUMORS.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

(Continued from No. 14, p. 337.)

HAVING thus considered the general results of attempts at removal of cerebral tumors, two secondary questions arise as to the effect that the location and the nature of the growth have upon the operation.

It is true, as Oppenheim and Bruns have said, that the question of the operative treatment of cerebral tumors is primarily the question of tumors in the Rolandic region, but Bergmann [2] goes somewhat farther in maintaining that we should operate only on tumors in the Rolandic region, and not on cerebellar growths. The distinction between tumors in the prefrontal, central and parietal regions is not quite easy to make from the reports of cases, since a good-sized tumor may lie between two regions, and may be classed as belonging to either (Table VIII). I have classed 9 cases as prefrontal, with 7 operative recoveries and 2 deaths, 192 as central, with 138 operative recoveries and 52 deaths, and 10 cases as parietal, with 8 operative recoveries and 2 deaths, so that the prefrontal and parietal regions seem as suitable for operation as the central itself. Operations in other parts of the cortex also disprove Bergmann's assertion. In 7 cases of tumor of the temporal region only 3 resulted fatally, and the statistics of abscess operations show that there is no special reason to shrink from operating on that region. In 6 cases of tumor of the occipital lobe there were 3 operative recoveries and 2 deaths, which shows that this last region may also be attacked under suitable conditions. Tumors of the central region are probably much more common than tumors elsewhere in the cerebral cortex, and the symptoms to which they give rise are usually much more definite and permit a much more exact diagnosis; hence such tumors have formed

[1] Read before the Section of Neurology of the American Medical Association at Denver, June, 1898, and before the Surgical Section of the Suffolk District Medical Society, November 3, 1898.

[2] Neurolog. Centralblatt, xvi, p. 920, 1897.

and will continue to form the chief number in operative cases, but there is no *a priori* reason why, if the diagnosis can be made, tumors in other regions of the cortex should not be operated on, and the statistics show that such operations may be attended with a fair share of success.

TABLE VIII.

TWO HUNDRED AND NINETY REMOVALS AND PARTIAL REMOVALS CLASSIFIED ACCORDING TO THE LOCATION OF THE GROWTH (INCLUDED IN TABLE V).

Region.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Prefrontal	5	2	6	30	2	2	2	9
Central	43	57	6	30	2	2	52	192
Parietal	2	3	1	1	1	0	2	10
Temporal				3		1	3	7
Occipital	1	1			1	1	2	6
Cerebellar	1	6		3			8	18
Not stated	18	3	1		2	11	13	48
Total.	70	72	8	37	6	15	82	290
Ferrier's cases of removal	6			8		3	3	20

Prefrontal tumors.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Nature of growth.
Previously collected, 3. Knapp. Op cit.	2						1	
Carle. Revue de Chirurgie, February, 1899	1							Sarcoma.
Devic and Courmont. Revue de Médecine, April, 1897		1						Glioma.
Doyen. Cong. Français de Chirurgie, 1891	1							Cyst.
Obici. Il Policlinico, ii, 6, 1895	1							
Thomas and Keen. American Journal of Medical Sciences, November, 1896		1						Sarcoma.
Vereo. Transactions Intercolonial Medical Congress of Australasia, 1893, p. 383							1	Hydatid.

Central tumors.								
Previously collected, 29. Knapp. Op. cit.	16	1	2	3		1	6	
Abbe. Presse médicale, November 13, 1895	1							
Abrams and Tait. Occidental Medical Times, June, 1896							1	Sarcoma.
Adenot and Carrier. Archiv. prov. de Chir., March, 1889		1						Glioma.
Albertoni and Brigatti. Rev. Sper. di Fren., xix, 1, 1895		1						Glioma.
Anderson, Buchanan and Coats. British Medical Journal, March 14, 1891	1							Sarcoma.
Annandale. Edinburgh Medical Journal, i, 899, 1894	1							Sarcoma.
Armstrong. Montreal Medical Journal, May, 1896	1							Cyst.
+ Back and Bernays. Medical Record, March 22, 1890							1	Glioma.
+ 8 Ballance. Medical Chirurgical Transactions, lxxix, 167, 1896				1				Sarcoma.
Bartlett. Hahnemann Monthly, May, 1890							1	"
Beck. In Auvray. Les Tumeurs Cérébrales, p. 251	1							"
+ Beck. " " " "							1	Glioma.
Beck. " " " " 252	1							Cyst.
3 + Von Beck. Beitr. zur. klin. Chirurgie, xii, 1				1				Glioma.
Beevor and Ballance. British Medical Journal, i, 5, 1895		1						Sarcoma.
Von Bergmann. Die chirurg. Behandlung von Hirnkrankheiten, p. 128, 2d ed.							1	Cyst.
+ Bird. Australasian Medical Journal, December 15, 1893		1						Glioma.
Bonhoeffer. Monats. f. Psych., April, 1898				1				Glioma.
+ Booth and Curtis. Annals of Surgery, February, 1893				1				Tubercle.
Von Bramann and Hitzig. Arch. f. klin. Chir., xlv, 365		1						Sarcoma.
+ 4 Von Bramann and Hitzig. " " xlv, 1893				1				Sarcoma.
Braymer. Charlotte Medical Journal, November, 1896		1						
Bremer and Carson. American Journal Medical Sciences, February, 1895							1	Endothelioma.
+ Broca and Maubrac. Arch. gén. de Méd., February, 1896		1						
+ Brugelius and Berg. Hygiea, lvi, 529, 1894				1				Glioma.
Bruns. Neurolog. Centralbl., xiv, 125							1	Angioma.
Bruns. Die Geschwülste des Nervensystems, p. 226							1	Sarcoma.
+ Bruns. " " " p. 227							1	Sarcoma.
Carhart and Bernays. Transactions Texas State Medical Association, xxiv, 203, 1892		1						
Chisholm. In Graham. Hydatid Disease							1	Hydatid.
Chisholm. Australasian Medical Gazette, p. 38, 1893							1	Cyst.
Cleghorn. New Zealand Medical Journal, vi, 14, 1893		1						
+ 3 Cleghorn. " " " vi, 255, 1893					1			Glioma.
+ 3 Cleghorn. Transactions Intercolonial Medical Congress, Australasia, 1892			1					Sarcoma.
+ Colquhoun. New Zealand Medical Journal, iii, 231, 1890		1						Sarcoma.
Cornil and Doyen. Bull. de la Soc. Anat. de Paris, November, December, 1897				1				Tubercle.
2 Crowley. Transactions Medical Society of the State of California, xxviii, 197, 1898				1				Sarcoma.
Czerny. Münch. med. Wochenschr., No. 11, 1896		1						"
Dallas and Mongeri. Gaz. méd. de l'Orient, 1897							1	"
+ Dana and Conway. New York Medical Journal, i, 773, 1895		1						
Davenport. Australasian Medical Gazette, p. 315, 1892							1	Hydatid.
Diller and Buchanan. American Journal of Medical Sciences, July, 1893		1						Cyst.
Dinkler. Neurolog. Centralblatt, xvi, 611, 1897							1	Fibroma.
Doyen. Arch. f. klin. Chirurg., lvii, 876, 1898	1							Cyst.
Dreyfus. Lyon Médicale, lxxxviii, 195, 1898				1				Gumma.
Duncan and Maylard. Glasgow Medical Journal, April, 1897		1						Sarcoma.
Escher. Lancet, i, 1,444, 1891							1	Hydatid.
2 Elliot. Boston Medical and Surgical Journal, June 3, 1897				1				Glioma.

TABLE VIII. — (Continued.)

	Central tumors.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Nature of growth.
+ 2	Erb. Deutsch. Zeitschr. f. Nervenheilk., ii, 414, 1892			1					Glioma.
	Eskridge and Parkhill. Medical News, August 1, 1896		1						Cyst.
	Eskridge and Parkhill. " " September 5, 1896		1						Angioma.
	Esteves. Semana Medica, May 17, 1894	1							Hydatid.
	Friedländer and Schlesinger. Wiener klin. Wochenschr., January 21, 1898		1						Gumma.
	Fürstner. Archiv f. Psych., xxiv, 634							1	Glioma.
	Gajkiewicz. Gaz. lek., Nos. 2 and 3, 1895	1							Gumma.
	Gibson. Edinburgh Medical Journal, February, 1896		1						Glioma.
+ 2	Graser. Arch. f. klin. Chir., l, 901, 1895							1	Sarcoma.
	Gray. Nervous and Mental Diseases, second edition, p. 316							1	Glioma.
	Grisson. Neurolog. Centralblatt, xvii, 1,135, 1898	1							Cyst.
	" " xvi, 1,068, 1897		1						
	Henschen. Mittheil. aus d. Grenzgebieten d. Med. u. Chirurgie, iii, 287, 1898				1				Cyst.
	Henschen. " " " "		1						
	Henschen. Klin. u. anatom. Beiträge z. Pathologie des Gehirns, iii, 194				1				Sarcoma.
+	Henschen. " " " " 214			1					Glioma.
	Hermanides. Operative behandeling van hersengezwellen, 1894							1	Sarcoma.
+	Hirschl. Neurol. Centralblatt, xv, 660, 1896		1						Sarcoma.
	Hitzig. Therapeut. Wochenschr., Nos. 19, 20, 1896							1	
	Horsley. Lancet, December 1, 1894				1				
	Jaboulay. Arch. prov. de Chirurgie, ii, 61, 1893		1						Fibroma.
	Jeannel. La Semaine méd., xi, 119, 1891		1						
	Jones. Medical Sentinel, v, 603						1		
	Jones and Moore. Northwestern Lancet, p. 316, 1891	1							
	Kappeler. Deutsch. Zeitschr. f. Chir., xl, 500, 1895		1						Endothelioma.
+	Koen. American Journal of Medical Sciences, cii, 231							1	Glioma.
	Kirschfink. Ueber Trepanation bei Hirntumoren	1							Cyst.
	Koehler. Charité-Annalen, xvii, 329, 1892							1	Sarcoma.
	Kozinski. Medycyna, xxvi, 1, 1898	1							
+	Krauss. New York Medical Journal, July 30, 1898							1	Glioma.
	Krauss. " " " "							1	Sarcoma.
	Krönlein. Beiträge z. klin. Chir., xv, 251, 1895		1						Tubercle.
	Landerer. Med. Corr. Blatt. des Würtemb. Ärzt. Landesvereins, lxvi, 369, 1896		1						Tubercle.
	Lanphear. Journal of the American Medical Association, December 19, 1891		1						Osteoma.
	Lanphear. " " " April 27, 1895		1						Angioma.
	Lanphear. " " " May 4, 1895	1							
	Lanphear. " " " May 4, 1895							1	Cyst.
	Laviston. Reference in Revue Neurologique, ii, 300, 1894				1				Cancer.
	Le Dentu. In Auvray. Op. cit., p. 316	1							Gumma.
	Llobet. Revue de Chirurgie, p. 970, 1892		1						Hydatid.
	McBurney and Starr. American Journal of Medical Sciences, April, 1893							1	Sarcoma.
+ 2	Mareau. Archiv. méd. d'Angers, i, 212, 1897		1						
	2 Mayiard. Glasgow Medical Journal		1						Sarcoma.
	Meyer. Annals of Surgery, xxvii, 770, 1898		1						Cyst.
	Mills and Keen. American Journal of Medical Sciences, December, 1891						1		Sarcoma.
	Morse. Pacific Medical Journal, p. 217, 1891							1	Sarcoma.
	Mudd. American Journal of Medical Sciences, i, 412, 1892	1							Hydatid.
	Mugnai. Riforma Medica, July 15, 1891							1	
	Murray. Lancet, March 16, 1895	1							Sarcoma.
	Mya and Codivilla. Il Policlinico, March 1, 1894		1						Hydatid.
	Nason. Lancet, May 25, 1895							1	Cyst.
	Nedwill. Lancet, i, 1,466, 1896		1						Hydatid.
+	Nixon. British Medical Journal, ii, 1,276, 1893							1	Enchondroma.
	O'Hara. Intercolonial Quarterly Journal of Medicine and Surgery, i, 48, 1894	1							Hydatid.
	Oliver and Williamson. British Medical Journal, November 26, 1898		1						Angioma.
	Oliver and Williamson. " "			1					Sarcoma.
	Parry. Australasian Medical Gazette, August, 1892							1	Hydatid.
	Pauly and Clement. Comptes Rendus de la Soc. des Sciences Méd. de Lyon, xxxiii, 3, 1894							1	Cyst.
	Péan. La Semaine Méd. No. 31, 1891	1							Angioma.
	Pel. Berlin. klin. Wochenschr., January 29, 1894							1	Fibroma.
	Poirier. Memoires de 6me Cong. français de Chir., p. 633, 1892		1						Angioma.
3	Post. Unpublished							1	Cyst.
	Postempski. Atti del XI Congresso Med. Internaz., iv, 20		1						Sarcoma.
2	Putnam and Richardson. Boston Medical and Surgical Journal, February 9, 1899.				1				Sarcoma.
	Reynier. Cong. français de Chir., v, 110, 1891		1						Glioma.
2	Riegner. Deutsch. med. Wochenschr. p. 497, 1894.	1							Sarcoma.
+	Ross. Medical Press and Circular, i, 175, 1894		1						Sarcoma.
+ 3	Rossolimo. Deutsch. Zeitschr. f. Nervenheilk., vi, 76, and Archiv f. Psych., xxix, 528				1				Glioma.
2	Roth. Deutsch. med Wochenschr., No. 25, 1895	1							Cancer.
	Sacré. Jour. de Méd. et de Chir. pratique de Bruxelles, p. 738, 1890	1							Hydatid.
	Schlesinger. Wiener klin. Wochenschr., January 21, 1898		1						
	Schnitzler. Centralbl. f. d. ges. Therapie, xvi, 85, 1898.							1	Tubercle.
	Von Schrötter. Cong. des Chirurg. Polonais, 1892	1							
	Schultze. Deutsch. Zeitschr. f. Nervenheilk., ix, 217							1	Sarcoma.
+	Schultze. " " " "							1	Glioma.
	Schwartz. Bull. Soc. de Chirurgie, xxi, 221, 1894							1	Tubercle.
	Selamanna and Pozempski. Archiv. di Psichiatria, xii, 461, 1891		1						Endothelioma.
+	Shaw and Bush. Bristol Medical and Chirurgical Journal, ii, 99, 1895				1				Sarcoma.
	Sick. Deutsch. med. Wochenschr., No. 2, 1897		1						Tubercle.
3	Sinkler. Transactions of the American Neurological Association, 1896							1	
	Söderbaum. Upsala Läkareför. Förhandl., xxvi, 63, 1890-91		1						Cyst.
+	Springthorpe. Australasian Medical Journal, p. 518, 1893				1				Sarcoma.
+ 2	Starr. Medical Record, i, 145, 1896				1				Cyst.
	Starr. British Medical Journal, October 18, 1897							1	Glioma.
	Starr. " " "							1	Cyst.
	Steele. Journal of the American Medical Association		1						
	Stewart. Pittsburgh Medical Review, November, 1892							1	Cyst.
2	Stieglitz. Transactions of the American Neurological Association, 1895	1							Glioma.
2	Stieglitz and Gerster. American Journal of Medical Sciences, June, 1893		1						Cyst.
2	Stratton and Crowley. Pacific Medical Journal, xli, 282, 1898					1			Sarcoma.
	Sweney. Northwestern Lancet, xiv, 261, 1894		1						Cyst.
	Syme. Australasian Medical Journal, p. 60, 1895	1							Sarcoma.
	Tauber. Archiv. di Psich. Russ., xxvii, 1, 1896				1				
+ 2	Taylor and Elliot. Boston Medical and Surgical Journal, 1896							1	Endothelioma.

TABLE VIII.—(Continued.)

	Central tumors.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Nature of growth.
	Taylor. Transactions of the Ophthalmic Society, London, xiv, 105, 1894	1							
+ 2	Taylor. " " " " "				1				
	Taylor. " " " " "				1				
+ 2	Taylor " " " " "				1				
	Taylor. " " " " "				1				
	Taylor. " " " " "				1				
	Terrier and Broca. Cong. de Chirurg. Franç., 1891		1						Cyst.
	Tietze. Centralbl. f. Chirurg., p. 850, 1893		1						Hydatid.
	Troje. Deutsch. med. Wochenschr., p. 103, 1894	1							Hydatid.
	Van Wayenburg. Psych. en Neur. Bladen, ii, 109, 1898		1						Sarcoma.
2	Vierordt and von Beck. Fortschr. d. Med., p. 493, 1894; and Beiträge z. klin. Chirurg., xii, 1		1						Tubercle.
	Washburn and Lane. Transactions of the Clinical Society, London, xxx, 154, 1897.		1						Endothelioma.
+	Webster. Canada Practitioner, xx, 813, 1895		1						Sarcoma.
+	White. Lancet, ii, 1,290, 1894					1			Sarcoma.
+	Wimer. New York Medical Journal, October 15, 1898						1		Glioma.
+ 2	Winkler. In Chipault. Trav. de Neur. Chir.		1						"
+	Winkler. Bijdrage tot de Hersen Chirurgie							1	"
	Winkler. " "							1	"
+ 2	Wood and White. University Medical Magazine, January, 1895		1						"
	Ziehen. Zeitschr. f. prakt. Ärzte, No. 5, 1898							1	Sarcoma.
2	Ziehl and Roth. Deutsch. med. Wochenschr., No. 19, 1897.		1						Sarcoma.
	Parietal tumors.								
	Previously collected, 2. Knapp. Op. cit.	1	1						
+	Von Beck. Beiträge z. klin. Chir., xii, 1							1	Glioma.
	Colman and Ballance. Transactions of the Clinical Society, London, xxix, 120, 1896				1				"
+	Eskridge and Parkhill. Medical News, July 11, 1896		1						"
	Fitzpatrick. Australasian Medical Gazette, p. 581, 1894							1	Hydatid.
	McCosh. American Journal of Medical Sciences, May, 1898		1						Angioma.
	Senenko. St. Petersb. med. Wochenschr., xiv, 51, 1889			1					
	Starr. American Journal of Medical Sciences, November, 1894	1							Angioma.
	Starr. British Medical Journal, October 16, 1897					1			Fibroma.
	Temporal tumors.								
+	Barr and Nicoll. British Medical Journal, October 16, 1897				1				Sarcoma.
+	Bruns. Neurolog. Centralblatt, xii, 386, 1893				1				"
+	Bruns. Die Geschwülste des Nervensystems, p. 226						1		"
+	Nicoll. Lancet, October 29, 1898				1				"
	Sommer. Jahrbücher f. Psych., xii, 32, 1893							1	Endothelioma.
	Stewart. Northwestern Lancet, May 15, 1897.							1	Sarcoma.
+	Winkler. Bijdrage tot de Hersen Chirurgie							1	Glioma.
	Occipital tumors.								
	Previously collected, 1. Knapp. Op. cit.							1	
	Bartlett and Van Lennep. Hahnemann Monthly, April, 1894		1						Sarcoma.
	Bullard and Bradford. Unpublished	1							Angioma.
	Hirsch. Ein Beitrag zur Chir. d. Occipitalhirns							1	Sarcoma.
	Kocher. Corr. Bl. f. Schweiz. Ärzte, July 1, 1897						1		Osteoma.
	Rodgers. Times and Register, ii, 343, 1888					1			Glioma.
	Cerebellar tumors.								
	Previously collected, 5. Knapp. Op. cit.		2					3	
+ 2	Collins and Brewer. Medical Record, May 15, 1897				1				Tubercle.
	Gibson. Edinburgh Medical Journal, February, 1896		1						Sarcoma.
2	Guthrie. Practitioner, lxi, 60, 1898		1						Cyst.
	Hermanides. Operative behandeling van hersengezwellen, 1894							1	Sarcoma.
	Macewen. British Medical Journal, ii, 1,367, 1893.				1				Tubercle.
2	Moran and Kerr. Virginia Medical Semi-Monthly, July 23, 1897				1				Cyst.
+	Munn. International Journal of Surgery, 40, 1895.							1	Glioma.
+	Murri. Lancet, January 30, 1897		1						Sarcoma.
	Parkin. British Medical Journal, December 19, 1896	1							Glioma.
+	Parry. Glasgow Medical Journal, ii, 36, 1893.							1	Tubercle.
	Pershing. Medical News, March 26, 1898							1	Glioma.
	Starr. Brain Surgery, 247, 1893.							1	
	Stewart and Annandale. Edinburgh Hospital Report, 127, 1895.		1						Sarcoma.
	Location not stated.								
	Previously collected, 6. Knapp. Op. cit.	2						4	
	Annandale. Edinburgh Medical Journal, p. 936, 1894					1			Cyst.
	Beevor. British Medical Journal, August 6, 1898.	4							
	Bieganski and Wrzesniowski. Medycyna, xxiv, 1,045, 1896.							1	Sarcoma.
	Von Bramann. 24te Cong. deutsch. Chirurg.	1							
	Felkin. Edinburgh Medical Journal, p. 1,031, 1894	1							Cyst.
	Gussenbauer. Prag. med. Wochenschr., p. 99, 1893						1		Sarcoma.
	Harrison. British Medical Journal, ii, 1,367, 1893							1	Gumma.
	Harrison. " "	1							Gumma.
	Hingston. New York Medical Journal, ii, 313, 1894	1							Hydatid.
	Hitzig. Mittheil. aus d. Grenzgebiet. d. Med. u. Chirurgie, iii, 365			1				1	Cyst.
	Horsley. British Medical Journal, ii, 1,366, 1893								Gumma.
	Kosinski. Obozr. psichiat., ii, 699, 1897						1		
	Lanphear. Journal of American Medical Association, April 27, 1895	3							

TABLE VIII. – (Continued.)

Location not stated.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Nature of growth.
Landmark. Upsala Läkareför. Förhandl., iii, 573, 1898					1			Cancer.
Landmark. " " "							2	
O'Hara. Australasian Medical Gazette, xvii, 37, 1898	1							Hydatid.
Postempski. Boll. della R. Accad. Med. di Roma, xix	1							Sarcoma.
Rebensburg. Casuistische Beiträge zur chir. Behandlung v. Gehirntumoren, 1897,	1						4	
Richardson. Journal of Nervous and Mental Diseases, xx, 535		1						Cyst.
Saere. Jour. de Méd. Chir. et Pharm. de Bruxelles, p. 739, 1890	1							Hydatid.
Vance. Australasian Medical Gazette, February 21, 1898		1						
Waterhouse. British Medical Journal, August 6, 1898	3	1				6		
White. Lancet, ii, 1,281, 1894	1							

The only remaining region of the brain accessible to the surgeon is the cerebellum. In rare instances, of course, growths may arise from the base of the skull and extend into the frontal or temporal lobes, but such growths symptomatically must be classed with tumors of these lobes. From the extreme difficulty in gaining access to the cerebellum, from the great danger of injuring vital regions in the neighborhood, in the pons and medulla, and from the uniform fatality attending the first attempts to remove cerebellar growths, many writers have questioned or even denied the propriety of making any attempts to operate in this region. Subsequent statistics have rendered this prohibition unwarranted. In 18 operations there

TABLE IX.

One Hundred and Sixty-five Cases of Complete Removal, Classified According to the Nature of the Growth.

Nature of growth.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Angioma	4	5					1	10
Careinoma	1			2				3
Cholesteotoma	1							1
Cyst	10	9		2			9	30
Endothelioma		3					2	5
Fibroma	3	1			1		2	7
Glioma (including gliosarcoma)	2	5		3	1		3	14
Gumma	5	2	1	1			1	10
Hydatid	9	6					8	23
Osteoma		2					1	3
Sarcoma	9	12	1	5	1	1	16	45
Tubercle	3	4		2			5	14
Total	47	49	2	15	3	2	47	165

were 10 operative recoveries and 8 deaths. Three of the recoveries died later from a recurrence of the growth, 6 were reported as improved, and one is said to have recovered. In the cases collected by Ferrier 4 were removals of cerebellar growth, of which one died, one lived from one to ten months, one lived over a year, and in one case the result was not known. The operation is clearly more dangerous than for a tumor in the Rolandic region, the diagnosis is also much more uncertain, but the results are favorable enough to warrant the undertaking, provided there be any indication that the symptoms are increasing and that the growth is not becoming quiescent.

With regard to the nature of the growth we are at once confronted with a difficulty. Our ability to diagnosticate the existence of a brain tumor or even its exact situation may be fairly good, but our ability to diagnosticate the nature of the growth must be regarded as distinctly poor. More than one case of glioma, for example, has been recorded where the patient has had syphilis, or even purulent otitis, so that the physician has suspected gumma or abscess. Our diagnostic skill is not yet sufficiently exact to enable us to say concerning two tumors in the same region, "This is a fibroma; operate. The other is a gumma; let it alone;" and in the majority of cases we cannot even make a probable guess. The discussion of whether to operate on gummata and tubercular growths is therefore somewhat aimless. The only rule that we can lay down is that when we have evidence of malignant disease elsewhere in the body, as in two cases recently under my observation, we should refrain from attacking the growth in the brain. Nevertheless, as the operative treatment of gumma and

TABLE X.

Fifty-two Cases of Partial Removal, Classified According to the Nature of the Growth.

Nature of growth.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Cyst				1				1
Enchondroma							1	1
Endothelioma							1	1
Glioma		4	3	5	1	1	13	27
Gumma							1	1
Sarcoma		6	2	7	1	1	1	18
Tubercle				2			1	3
Total		10	5	15	2	2	18	52

tubercle has been the subject of much discussion, it is worth while to consider the statistics (Tables IX and X).

(To be continued.)

Hospitals Not Liable for Damages for Unauthorized Autopsy. — We learn from the *Medical Record* that a Philadelphia judge, in refusing a new trial in a suit for damages against the German Hospital, has decided that as a public charity, possessed of no funds except such as have been contributed by the charitably disposed for the furtherance of its philanthropic purposes, the diversion of its assets to compensate for injuries inflicted or occasioned by the wrongful acts of its agents or servants would be against all law and all equity.

Clinical Department.

RESECTION OF THE CECUM AND A PORTION OF THE ILEUM FOR CARCINOMA.[1]

BY FREDERICK WILLIAM JOHNSON, M.D., BOSTON.

M. L., sixty-five, widow, entered the St. Elizabeth's Hospital March 6, 1899. Her mother died of strangulated hernia. Patient had always enjoyed good health up to one year ago. Married thirty-four years and has had five children. Menopause fifteen years ago. There has been loss of strength and flesh during the past year. Though always pale, the pallor has noticeably increased during the past few months. Bowels somewhat constipated. Appetite good. No pain in the abdomen. Urine, sixty ounces in twenty-four hours; specific gravity 1.017; no albumin, no sugar.

Physical examination. — Left inguinal hernia. Just above McBurney's point there was a mass which felt the size of a cocoanut. This mass was nodular, movable, and sensitive on pressure. There was also a rectocele protruding through the vulva and external hemorrhoids.

An incision was made directly over the tumor. After about half an hour's work in separating adhesions and adherent intestines it was found that the condition was one of malignant disease of the cecum in the neighborhood of the ileo cecal valve. Several inches of the intestines were resected, removing all the cecum and a few inches of the ileum. The cut end of the colon was closed in the usual way, thus making another cecum. Into this new cecum, at about one inch from the end, a button-hole was cut. Into this the ileum was drawn for an inch by traction threads and there fastened with silk. The omentum was carefully spread around the anastomosis and gauze drain was put in. The sequel proved that the gauze was not needed. A few enlarged mesenteric glands were found in the specimen removed. Careful search was made for enlarged glands and diseased omentum before closing the incision, but nothing suspicious was found.

Six days after the operation she was doing well. The temperature was normal; pulse 80. Bowels moved thoroughly, gas was freely passed, and digestion was going on satisfactorily.

Dr. Warren F. Gay reported that the disease was an adenocarcinoma of the cecum. He could not find in any place that it had passed through the intestinal wall. The mass inside the cecum was the size of a hen's egg.

April 24th. She went home, having been up and about for several days. She had a good appetite, no indigestion, slept well, and the bowels moved naturally every day.

May 3d. Her son reported continued improvement.

[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, March 22, 1899.

THE SUPPORT OF BALTIMORE COLLEGE DISPENSARIES. — According to the *Journal of the American Medical Association*, the medical colleges of Baltimore have decided that unless the city appropriates money for the maintenance of the dispensaries connected with them, these dispensaries will be closed.

A TUMOR OF THE LABIUM.[1]

BY EDWARD L. TWOMBLY, M.D., BOSTON.

A FATTY tumor of the labium is said to be "one of the rarest gynecological affections." The cases recorded number only 23 or 24, and Kelly states that "no writer has recorded more than a single instance in his own practice." For this reason I am led to give you a short account of one other, which came under my notice in August, 1898.

The patient, K. L., white, single, age forty years, was born in Maine and was first seen in the Out-patient Department of St. Elizabeth's Hospital by Dr. C. M. Whitney, who referred her to me for operation.

Her family history was good, and she herself had always enjoyed good health. Menstruation began at fourteen years; three days in duration; no pain or clots; six napkins; always regular. Bladder symptoms none; urine negative. Heart and lungs negative. When she was eighteen years old, she states that she had some "hard bunches in each breast" that disappeared after a few months, and she also had a wen on the right side over the ninth rib, which discharged "curious, worm-like, yellowish-white matter" and then healed.

She first noticed this growth on her right labium two years ago, and describes it as a "hard bunch, the size of a bean." In one year it had grown as large as a walnut, and then began to be pedunculated. The elongation continued for five months and then the tumor itself had reached the size of an orange and began to bother her when she walked or sat down. There had never been any pain, nor increase in size at menstrual periods.

On examination, the tumor was found to hang from the outer side of the right labium at a level of the clitoris. The tumor rested on the table with the patient lying down. Its pedicle was three centimetres in length and three in circumference. The tumor was 17 centimetres in length and 14 in circumference, and there was a superficial ulceration at its lowest portion from friction. Its appearance was pear-shaped, which flattened out very much when it was placed on a table. It felt soft, with the fat predominating, and was covered with wrinkled skin, from the upper part of which grew a few hairs. It was not sensitive or painful on pressure, and its pedicle did not extend into the inguinal canal.

On August 2d the operation was done under aseptic precautions, and while the pedicle did not seem large enough to suggest hernia, yet that possibility was kept in mind in spite of the fact that there was no impulse on cough, or reduction in the horizontal position. An oval incision was made in the labium at the base of the pedicle, which was then excised. Several (five) vessels were tied with No. 1 chromicized catgut, so that the wound might be perfectly dry, and it was then closed with a buried continuous suture of the same. There was no elevation of temperature; the wound healed by first intention and she was discharged well in six days.

Six months afterwards I saw the patient, who had not suffered the slightest discomfort or any further swelling of the labium, and the scar was scarcely to be found.

The diagnosis in this case was easy, because the

[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, March 22, 1899.

tumor had all the characteristics of fatty tumors elsewhere, namely, it was "a well-defined ovoid," soft, sense of fluctuation, pediculated, covered by wrinkled skin, and painless.

In distinction from a fibroma, the lipoma is apt to appear at any age, is less vascular and is softer, fluctuating or lobulated, while a fibroma more often occurs in the colored race, in the *young* adult, is apt to be supplied with many more vessels of larger size, and its density is much harder.

In the cases reported by different observers the majority of the women were over thirty years old, and the lipomatous growth was slow compared to the present case.

The average age in 13 cases was thirty-five years. The youngest girl was eighteen years, operated on by Kelly. Where the duration of growth was noticed, it was over eight years. In 17 cases the situation was given — seven tumors being found on the right labium and ten on the left. A patient thirty-three years old noticed the growth for four years; one patient forty-six years old, for nine years; one patient thirty years old, for ten years; one patient sixty-one years old, for seventeen years. The older a patient was, the longer she allowed the growth to remain.

One patient tried to cut it off with a razor and nearly died from loss of blood.

These growths, if congenital, are very deeply situated. If they are situated in the flexures of the body or limbs, as in the gluteal folds or perineum, they tend to become polypoid. Trauma may produce them (none in my case). They are noticed in erotic individuals. (I could detect no sign of this in my patient. The left labium was not enlarged and the hymen was intact.) Their distribution is said to correspond to that of the subcutaneous fat, except that they are rare on the abdomen.

Martin states that lipomata of the labia "occur more often in the East, that is, tropical lands," and "arise from pre-existing papillæ," but he gives no cases.

We can readily see how easily such tumors of the labia may become pedunculated, for the tissues in this region beneath the skin are "connective tissue, elastic elements, which predominate, and fatty lobules with underlying adipose tissue and abundant vascular supply."

Treatment is surgical, very easy, but should be done carefully. The growth does not return.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

REGULAR meeting Wednesday, March 22, 1899, DR. R. A. KINGMAN in the chair.

DR. JOHNSON reported a case of

RESECTION OF THE CECUM AND A PORTION OF THE ILEUM FOR CANCER.[1]

DR. CUMSTON: I would like to ask Dr. Johnson if he simply sutured the two serous surfaces together?

[1] See page 364 of the Journal.

DR. JOHNSON: Each stitch was carried down to the mucous coat and out and down on the other side as far as the mucous coat, then the peritoneum was sewed with an over-and-over suture.

DR. E. L. TWOMBLEY reported

A TUMOR OF THE LABIUM.[2]

DR. JOHNSON: I have seen four cases of tumor of the labium; two of them were herniæ and the other two belong to the class called molluscum contagiosum. These are pedunculated growths, and as I understand, are not so very uncommon in that part of the body. Those are the only four I remember of having seen in connection with the labia.

DR. STORER: Dr. Twombley has said the diagnosis from fibroids is very easy. In fibroids sometimes the lymph spaces become very much dilated and the diagnosis between a fibroid and a myxoma or lipoma is sometimes almost impossible without the microscope. Sometimes the lymph spaces are so dilated that the border line between them and cysts is closely approximated.

DR. TWOMBLEY: I did not mean to convey the idea that the diagnosis was extremely easy in all cases. It seemed to be so in this case. When one comes to see the two cases, there are many characteristics in common, and, as Dr. Storer says, the only means of diagnosis in certain cases is by the microscope. That will tell you exactly what you have.

DR. F. H. DAVENPORT read a paper on

THE EROSIONS OF THE CERVIX UTERI.[3]

DR. CUMSTON: I have not very much to say, except that from my limited experience in the disease in question it has seemed to me that the treatment by trachelorrhaphy is not only indicated, but is the proper treatment in a large majority of cases. The fact that the lesions give rise to so much trouble seems to me makes an operation so slight as the one recommended perfectly justifiable; on the other hand, I have often been struck, when restoring a lacerated cervix, by the tremendous depth to which the erosions may extend and I do not see how any local treatment would possibly reach them, because after quite a large section of tissue has been excised there may still leak out a certain amount of clear, mucous liquid, showing the culs-de-sac of the glands in the depths of cervical tissue have not been removed, and I have often excised extra pieces, to be sure of getting all the glandular tissue away. My experience with the form produced by ectropion not due to laceration is extremely limited. I have seen a few of those cases in dispensary practice among working girls where I was rather at a loss to account for the condition. There was no history of gonorrhea, the hymen intact, etc. Those cases I find are far more obstinate to do anything with than the more pronounced cases due to laceration of the cervix. In fact, I have only resorted in one or two to puncture and curettement with Unna's acne lancet — a little spear-pointed lancet that is pushed into the acne pustule. I used that to get out the fluid and cauterized the erosion with carbolic acid and tincture of iodine, 1–20. I cannot say how long the result remained because we cannot keep run of the patients. Some of them did very well with that treatment. I believe, however, that the arthritic diathesis plays some rôle in the case

[2] See page 364 of the Journal.
[3] See page 357 of the Journal.

of erosions of the cervix in virgins. The discharge is apt to have an acid reaction and a general treatment with syrup ferri iodide, and, locally, a daily irrigation with a mild bicarbonate-of-soda solution will do a great deal in improving the condition. Eczema and erosions are often present in the same patient.

Dr. Storer: I am very glad to hear Dr. Davenport make this sharp distinction, because I have been very much struck by the great rebelliousness of these cases in some young women in whom there was no causal infection so far as I could make out. I confess it seems to me rather hard to understand how there can be any erosion there without some bacterial infection of some kind. Very possibly that such a condition persists is an index of their rather low general condition, but it seems to me there must be some kind of bacterial activity to account for it primarily. The treatment by general means I have found very much more advantageous than any local treatment.

Dr. Kingman: I have been greatly interested to hear this paper. We frequently see young girls who have been treated for months and months for ulcerated cervix. It does not do any good to tell them there is no ulcer there and they never had one; it simply makes trouble and does no good. The idea seems to be firmly rooted in the minds of the older practitioners that everything in the way of redness is an ulcer. I have found these cases very intractable, and yet I have always felt that the erosion of the cervix was simply an indication of something else; not a separate disease of itself, but rather an indication of endometritis or endocervicitis than anything else. The idea that it could be caused directly as the result of the neurasthenic condition had never occurred to me. I shall be interested in tracing that relationship in the future. I have rarely done anything in the way of local application because I have thought it was not a local condition to be combated, and also because local treatment has been manifestly a failure in my hands, but it has seemed to me that I have seen a very large percentage of amelioration and cure as the result apparently, or at least following, the treatment of the conditions of chronic inflammation higher up. Especially does this seem to me the fact because of the relationship of these erosions and anteflexion, conical cervix and anteflexed uterus. In this case one finds almost invariably an endometritis. In fact, I am strongly inclined to accept Schultze's explanation of extreme cases of anteflexion on the supposition of parametritis posterior, which in turn is caused by endometritis. There being this endometritis higher up, we have to seek no further for the cause of an erosion, and I believe that these erosions disappear always if we get rid of the endometritis or endocervicitis. It is a large if, but if that condition is removed, cure almost certainly follows.

Dr. Davenport: I merely want to add that the most interesting class of cases to me are those which occur in young unmarried women. The suggestion which was made in the paper, as shown by two of the oldest German investigators, that there was a period in the fetal life when the whole genital tract was covered with cylindrical epithelium, and sometime in the later months of fetal life the cylinder epithelium was changed to pavement epithelium, and that frequently this process did not go on to completion, might account for many of these cases we find in young women where there is apparently no possibility of infection. The fact that these cases are poorly developed in other ways would seem to add to the probability that there was a lack of development of the genital organs as well. This is shown by the occurrence of these cases in women with anteflexed and small uteri. A conical cervix, with anteflexion of uterus, we recognize as belonging to a poorly developed uterus. Certainly, clinically, I have seen these cases where there was, as far as could be made out, no evidence of any inflammation of the genital tract higher up, no evidence of endocervicitis or endometritis, and if the foregoing observations are correct, that may explain such a condition. That being the case, a congenital erosion would be an affair of long standing, and the tissue changes not being of recent origin would necessarily be very rebellious to ordinary forms of treatment, and for these cases this simple operation would seem to be more indicated than the treatment by means of applications.

Dr. F. W. Johnson read a paper entitled

LIVE STEAM IN THE TREATMENT OF UTERINE DISEASE.

Dr. Storer: My experience with this method of treatment has been more limited than Dr. Johnson's. I began, I think, last June, and since then have had a chance to try it in only a few cases. These were of various types — endometritis, cancer, etc. The first case in which I tried it was a case of hemorrhage that had been curetted with practically no effect, and the steam stopped the hemorrhage so completely that I tried it further. I use practically the same apparatus that Dr. Johnson has, a very much more primitive one than the Germans use. I have, however, not thought it necessary to use the Burrage speculum. I arm the canula with a piece of rubber tubing long enough to protect the cervix and the operator's fingers, and find that such a contrivance works perfectly well. If the operation is done under ether after the vagina is sterilized and the cervix dilated, I have been in the habit of filling the vagina with ice water until I was ready to insert the canula. I think the cervix ought always to be dilated, and if the cervix is at all tight I regard an anesthetic as almost indispensable. In the case of women, however, with a cervical canal well dilated or easily dilated, I have not had the slightest hesitancy in using steam in my office without ether. The patient is told to lie down when she gets home, but actually going to bed is not insisted upon. As regards the use of steam when the appendages are affected, further experience will very likely show us we can use it with more impunity than now seems advisable. I have not seen any bad results in the few cases in which I have used it when there was positive disease of the appendages. It seems to me a most promising method of treatment. I have had three failures: one a hemorrhage case that did not seem to stop although it was repeated four times, and two cases of very severe gonorrheal endometritis in which it did not seem to have any effect. I think it was due to not having sufficiently high temperature. With the apparatus of Dr. Johnson I do not think we can get steam much over 100°, and by the time it gets to the fundus I doubt if it is as high as 100°, and in many cases I believe a short exposure, twenty seconds or so, to steam at a temperature of at least 100°, would do vastly more good than a longer exposure at a lower temperature.

Dr. Davenport: I have had no experience with this. I have been very much interested in the paper, and should feel that it was a method of treatment which would be applicable in cases which are very stubborn to ordinary forms of treatment. I particularly have in mind the cases of senile endometritis where there is a purulent discharge, which have seemed to me to be most rebellious to ordinary forms of treatment, particularly curetting, and I should think in this method of treatment we had something which was very valuable.

Dr. Boland: I am surpised that Dr. Storer's case of gonorrheal endometritis should have been a failure under this treatment. In gonorrheal knee-joints Dr. Goldthwait opens the joint and flushes out with water at 110° F., and says the gonococcus is killed by water at that temperature. He closes the joint and does up with plaster-of-Paris. There may have been a mixed infection in Dr. Storer's case.

Dr. Johnson: By 100° is meant 100° C. which is 212° F. I think I should be a little afraid to use very much pressure inside the uterus. I think if you get steam up to 215° or 217° F. you would burn a good deal deeper than necessary and would not get regeneration of the endometrium all over the cervix at least. In this instrument there is next to no pressure. If you wipe out the uterine cavity perfectly dry and steam twenty seconds, and then wipe out again thoroughly dry and steam again for twenty seconds, I think you get sufficient effect of the steam with the ordinary atomizer to destroy the endometrium so that it is all exfoliated. You get the same result you are after in all those cases where you use the curette. If steam used as I have described will cause exfoliation of the endometrium, it is certainly preferable to the curette. It comes in intimate contact everywhere with the inside of the uterus and is easier of application and less likely to do harm than the curette. I have not used it without ether. The Germans use it right along at their clinics without any anesthetic. I see no reason why it could not be used without an anesthetic if the cervix is sufficiently patulous.

AMERICAN PEDIATRIC SOCIETY.

The Eleventh Annual Meeting of the American Pediatric Society, held at Deer Park, Md., June 27, 28 and 29, 1899, was called to order by the President, Dr. William P. Northrup, of New York, who chose for the subject of his Annual Address

THE TEACHING OF PEDIATRICS.

He said: The American Pediatric Society is made up to a large extent of teachers of pediatrics, and the discussion of the methods of teaching this subject may be worth our while. What place should the subject of pediatrics have in the curriculum? In an undergraduate course what number of lectures and what amount of time should be given to the subject of pediatrics?

In answering these questions I must draw upon my own experience. In the whole scheme of instruction we may admit the first importance of general medicine, general surgery and obstetrics, and then pediatrics shares with gynecology the second place. Our course of instruction at present includes didactic lectures, clinics and section teaching. There is a wave of sentiment against didactic teaching, and no doubt the reaction against the former complete dissertations on disease is justified, but the didactic lecturer has yet a function, which is to present to the beginner the salient points of a subject, to give the essentials of a subject. Certain diseases must also be seen clinically in order to understand them, and in addition to the regular clinic attended by all, there should be section teaching, so that the students may get very near the patient, and, if possible, each one should repeat the demonstration. In this way gavage, lavage, lumbar puncture, etc., can best be taught.

Dr. Northrup then described what he considered the best arrangement of hospital rooms and wards for teaching purposes, and gave a list of diseases that should be taught entirely by the chair of pediatrics. He was also quite enthusiastic about the value of the stereopticon for teaching purposes. In regard to the status of the teacher of pediatrics, he said that in their school the professor of pediatrics was not a member of the governing faculty, but both he and his chief of clinic received a salary.

Dr. Rotch explained the advance that had taken place in the teaching of pediatrics at Harvard University, and said that it now holds the same position as any of the other branches of clinical medicine or surgery; that the teacher holds a full professorship, receives a salary, and is on an equality with the other members of the faculty. The course of study continues from October to June, and is divided into didactic lectures, clinical instruction and clinical conferences. For the purpose of the conference a certain number of students were asked to work up cases and present them at a meeting over which the professor of pediatrics presides. The subject is then open for discussion, first by the students and then by the pediatric staff. This seems to incite the men to do good work. Lantern-slides are also used with good results. Examination on pediatrics is compulsory.

Dr. Griffith said that, as usual, Philadelphia was not progressing quite so rapidly as Boston, but that there had been at the University of Pennsylvania a steady advance in the recognition accorded pediatrics. The teacher of this branch holds a clinical professorship, but the subject of pediatrics is an elective study. He expressed a hope that the time would come when full recognition would be accorded his department and the study of pediatrics be made compulsory for all students.

Dr. Chapin said that his work had been mostly with post-graduate students and that he had found a large number of the students were not well grounded in the principles of pediatrics. He thought that this was largely due to the fact that the college authorities had not appreciated the importance of pediatrics and had not accorded it the proper place in the curriculum. He thought that it should not be tacked on to obstetrics or to gynecology, and that it should not, on the other hand, be treated as a specialty, but that it should be taught as a branch of general medicine.

Dr. Blackader said that it had been his custom to devote his didactic lectures mainly to a consideration of infantile development and the different way in which a disease manifests itself in the child as compared with the adult. The teacher in McGill University is associated with the chair of medicine, does not hold a chair in the faculty and has no emoluments.

DR. ADAMS thought that the matter does not rest so much with the colleges as with the men themselves. That if they insisted upon proper recognition they would receive it. He cited his own experiences to show that at least one faculty had been made to recognize the full importance of pediatrics and he considered it quite as important as any other branch of medicine.

DR. FORCHHEIMER thought that pediatrics might be taught along with general medicine.

DR. ROTCH opposed this idea on the ground that the subject matter was too large for one man, and that while pediatrics was not to be considered a specialty, it could be best taught by one especially interested in the subject.

DR. COTTON explained the method just adopted at Rush College, in which the junior students are to be thoroughly drilled in the preliminaries and the seniors are given actual clinical experience.

DR. CRANDALL thought that the students were more progressive in many instances than the colleges, for the classes in diseases of children in the post-graduate schools are among the very largest.

DR. HENRY KOPLIK, of New York, read a paper on

THE INCREASE OF WEIGHT IN INFANTS FED ARTIFICIALLY.

During the past nine years I have conducted in connection with my dispensary clinic a laboratory for the artificial feeding of infants, and for the purposes of the present study, infants below the age of nine months were observed and as many collected as would remain under observation for a protracted period. And, I have studied first, infants fed from birth, or nearly so, with a modified cow's milk; second, infants fed with breast and cow's milk. The modified milk supplied to these infants was in all cases the same, being composed of cow's milk diluted with equal parts of distilled water and six per cent. of sugar of milk added. Infants below three months received three ounces of this mixture; above this age an ounce is added for every month until eight ounces are reached, when full whole milk is administered. The infants were systematically weighed. In some of the older children who did not prosper on this Heubner-Hofman mixture, I increased the amount of fat. My patients were all taken from an ambulatory service in the slums.

Dr. Koplik then gives tables to show the gain in weight of these 25 cases and adds: It is quite safe to predict that an infant, if it has the breast only once or twice in the course of the twenty-four hours, will thrive on the bottle much better than on the bottle alone, and I am convinced that it is inadvisable to deprive the infant of the mother's breast no matter how scant the secretion in the breast may be. It is very difficult to decide how much cow's milk should be given such infants, because it is impracticable to measure the amount of milk secreted by the breast in question, but an observant mother and physician will soon find out how much additional milk to give.

DR. ROTCH thought that while this work was very interesting, it was not at all scientific, and that one could not make a test of any method of feeding upon cases of an ambulatory nature, for he could not tell what they were getting when away from his observation.

DR. KOPLIK admitted the force of this objection, and said that he had not attempted to show the value of any particular mixture, but merely to determine how much weight a bottle-fed infant should be gaining if it were prospering.

DR. ROTCH contended that that was just what Dr. Koplik had not shown, as his children were not bottle fed only, and he could not say how much other food they had obtained.

DR. MORSE also considered the work without scientific value, because while it recorded the gains of a certain small number of infants fed on a certain mixture, it did not report the number or condition of those that did not thrive under the same circumstances.

DR. WENTWORTH called attention to the fact that analyses had shown that when the mother's milk becomes scanty, it is very apt to be a poor milk, and stated that if Dr. Koplik recommended any breast milk as better than artificial feeding alone he would have to take issue with him on that point.

DR. CHAPIN thought that clinical experience seemed to show that even though the albuminoids were high and the fats low, still it was better to give the baby that milk, together with the substitute feeding, rather than to cut it off entirely.

DR. BLACKADER rather agreed with this, as he considered it no light measure to at once put the child on artificial feeding.

DR. WENTWORTH said that he recognized the value of mixed feeding, and only criticised Dr. Koplik's point that even a very scanty supply of milk was better than bottle feeding alone, and he maintained that if scanty milk was poor milk he could not agree with Dr. Koplik.

DR. FORCHHEIMER said that while he should be sorry to have in private practice such results as Dr. Koplik reported, still he thought we could not decide these questions yet on the basis of physiological chemistry.

DR. GEO. N. ACKER, of Washington, read a paper entitled

PORENCEPHALUS; CASE AND SPECIMEN.

The patient was a colored male child, age four years. Soon after birth the mother noticed that the eyes had a peculiar appearance, and that he did not move his right arm or leg. He never made any attempt to walk or talk, and was quiet at all times except when hungry, at which time he would cry. The muscles were soft and flabby, with a noticeable atrophy on the right side, and the right forearm was strongly flexed and could not be extended. There were pronounced nervous symptoms, and the temperature at one time reached 107°. Post-mortem examination was made twenty-six hours after death, and it was found that the right hemisphere weighed nineteen and one-half ounces, the left, fourteen and one-half. The fissuration was quite atypical and interfered with a study of the convolutions. The defects in development of certain parts of the brain correspond pretty closely to the parts supplied by the middle cerebral artery and the author thought they had been caused by some change in this artery.

DR. R. G. FREEMAN, of New York, read a

PRELIMINARY COMMUNICATION ON SEPARATION OF BACTERIA FROM MILK BY NATURAL PROCESSES.

He said that he had previously expressed the opinion that raw milk, even when the conditions of the

dairy were satisfactory, could not be considered safe for administration without heating, because it was likely to contain a considerable number of bacteria, and we could not make sure that among these there might not be the bacteria causing diarrhea, typhoid fever, diphtheria or other diseases. For that reason he desired to make a preliminary report on some work which, while incomplete, seemed to show that the great bulk of bacteria which contaminated milk might separate from it by natural processes without the use of filtration, heat, or preservative agents. If milk is allowed to stand and the cream separates off and then a separate analysis is made of the milk and cream, it is found that the cream contains some three hundred times as many bacteria as the milk, and with the rising of the cream about 99 per cent. of the bacteria are removed from the milk. He thought the separation was probably due to the fat globules carrying the bacteria with them in the course of their inverse precipitation, and suggested that if this proved to be correct we might allow such a separation, sterilize, or pasteurize the cream and then add it again to the practically germ-free milk for administration as a food.

Dr. Koplik thought it would not be wise to let the impression go abroad from this that we are prepared to advise the use of raw milk for babies.

Dr. Forchheimer said that the ideal food of the future is going to be raw milk, and that the tendency is in that direction.

Dr. Rotch said that some infants who cannot take pasteurized or sterilized milk do well on raw milk if administered in proper modifications.

Dr. Adams agreed with Dr. Forchheimer that raw milk would be the ideal food.

Dr. S. S. Adams, of Washington, read a paper entitled

SARCOMA OF THE CEREBELLUM IN A CHILD AGED FOUR YEARS.

The patient was taken sick in June, 1897, the prominent symptoms being high fever and vomiting. In a week's time she had apparently recovered under treatment, but a month later began to complain of intense pain in the head and right arm. Then a weakness of the legs became manifest, the child frequently staggering and at times falling. She slept well at night and seemed to suffer principally in the mornings and afternoons. She developed a second attack of fever and vomiting, after which she lost control of her bowels and bladder. Dr. Adams made the diagnosis of cerebellar tumor, which was proved by autopsy to be correct. The brain weighed thirty-nine ounces, and every suture in the cranium was widely separated.

Dr. J. Park West, of Bellaire, Ohio, read a paper on

ENLARGED BRONCHIAL NODES.

He reported cases of eight children in whom the diagnosis of enlarged bronchial nodes had been made and who were brought to him on account of the accompanying cough. Every child had enlarged cervical nodes; in six there were in addition large axillary nodes and in five large inguinal nodes. All had large tonsils. Two had adenoids that interfered with nasal respiration, and in three the spleen could be felt. The author believes that the enlargement of these nodes was the local manifestation of the status lymphaticus.

Dr. Ratchford said that he had seen four cases this winter presenting similar symptoms that were relieved by removing the adenoids.

Dr. Chapin said that the paper had reminded him of a number of cases of obscure cough where careful physical examination would show no apparent cause for it and where there were also no adenoids.

Dr. Crandall said that he frequently saw these cases in which there were adenoids, with persistent cough.

(To be continued.)

AMERICAN DERMATOLOGICAL ASSOCIATION.

Twenty-third Annual Meeting, held at Philadelphia, May 30, 31, and June 1, 1899.

(Concluded from No. 14, p. 350.)

SECOND DAY.

The session opened with a general discussion on

THE RÔLE OF PUS ORGANISMS IN DISEASES OF THE SKIN.

The referee, Dr. G. T. Elliott, of New York, reviewed the

LITERATURE OF THE PURULENT DERMATOSES AND THEIR EXCITING ORGANISMS.

The causes may be chemical, microbic or unknown. Infection of the skin may take place from within through metastasis, or from without from bacterial entrance into the follicles of the skin. The staphylococci, as saprophytes, abound in the scales of the scalp, under the nails, around the genitals and perineum, etc. The literature of the subject presents the following observations:

Abscesses of the skin and subcutaneous tissue are due to the staphylococcus pyogenes aureus or albus, or to the streptococcus pyogenes. Phlegmon has been shown in 10 out of 14 cases to be caused by the streptococcus pyogenes.

Carbuncle is said by Unna to be due to a peculiar streptococcus. Experimental inoculation with the ordinary streptococcus has produced the disease.

Furuncle has been proven to be due to the staphylococcus aureus. Impetigo vulgaris is claimed by Unna to be produced by an ochre-yellow coccus, which he calls the impetigococcus. He distinguishes a number of different forms of impetigo.

Folliculitis of lanugo hairs is ascribed by Wickham to the agency of the staphylococci.

Ecthyma is maintained to be due to the staphylococci.

Acne vulgaris lesions are, according to the French writers, the result of the action of the staphylococci; Unna claims pathogenicity for his micro-bacillus.

Peri-umbilical pemphigus is said to be caused by the staphylococcus aureus.

Sabaroud ascribes pus-producing properties to a tinea found in horses.

Evidences of metastasis are seen in furunculosis following certain forms of angina, influenza, etc. Furunculosis has been reported to have followed gonorrheal urethritis; gonococci were recovered from the pus of the furuncles.

The writer, in concluding, remarked that the bacterial findings in purulent dermatoses are in many cases contradictory. Pyogenic cocci are not the only

causes of suppuration. Many organisms not ordinarily pus producers may become so under certain conditions. Beyond our knowledge of the bacteria causing the group of diseases which comprises abscess, furuncle, carbuncle, phlegmon, etc., the subject is unsettled.

The co-referee, DR. T. C. GILCHRIST, of Baltimore, presented the

RESULTS OF BACTERIOLOGIC EXAMINATION OF 300 VESICULAR AND PUSTULAR AFFECTIONS OF THE SKIN, WITH SOME INOCULATION EXPERIMENTS.

Impetigo contagiosa. — Seventeen cases examined. The streptococcus was found in every case; in 10 in pure culture; in others associated with staphylococci pyogenes. The pseudo-diphtheria bacillus was found in 2 cases. The results confirm those of Larue, who found streptococci in 220 out of 270 cases. The streptococci found are not as virulent as those in erysipelas. Inoculated mice die in a week or ten days, and the organism can be recovered from the heart.

Tricophytosis. — The ringworm fungus is certainly capable of producing pus. After thorough antiseptic cleansing of the skin, the writer scarified the arm of a subject and rubbed in a pure culture of the tricophyton megalosporon ectothrix. There developed in a few days an eczematous patch with small pustules at the sites of hair follicles. Cultures made from these pustules gave a pure growth of the tricophyton fungus. This experiment was repeated, another subject being inoculated with a pure culture taken from the pustule. In two weeks there was formed a large eczematous looking patch with surrounding pustules around the lanugo hairs. The hairs were found to contain the mycelia and spores of ringworm. A smear slide from the pus failed to show micrococci. The evidence is conclusive that the tricophyton fungus may produce pus.

Furunculosis. — Twenty cases examined. Staphylococcus aureus was present in every case. The organism appeared in the smear preparation as a diplococcus.

Scabies. — Nine cases examined. The pustules were in 4 cases due to the streptococcus, in 2 cases to staphylococcus and streptococcus, in 2 cases to staphylococcus albus, and in 2 to staphylococcus aureus.

Superficial whitlow. — From the vesicles there were found in 1 case streptococci, 1 case staphylococcus albus, and 1 case staphylococcus albus and aureus.

Sycosis. — Pustules showed staphylococcus aureus.

Syphilis. — Nine cases examined. Pustules showed streptococci and staphylococci.

Vesicles produced by carbolic acid and croton oil were sterile, as were also those in dermatitis venenata (11 cases), herpes zoster, pernio and erythema multiforme.

Eczema. — Twenty-eight lesions from 19 cases examined. In 4 cases out of 5 vesicles examined were sterile; 13 cases of eczema madidans gave staphylococci.

Acne vulgaris. — Ninety pustules from 53 cases examined. Forty-nine cultures made on agar were sterile; 31 gave staphylococcus epidermidis albus; on nine tubes from 9 cases a bacillus was grown. *This bacillus was found in all of the 90 cases in the smear preparation.* Gilchrist looks upon this bacillus as the cause of the acne lesion. He claims that the growth on agar and glycerin agar only takes place when the pus is deposited in a clump upon the medium and not spread on the surface. The staphylococcus epidermidis albus so frequently found was due to contamination, the result of faulty technique, and was not found when the precautions were strict. The organism is a short thick bacillus, does not grow on gelatine or milk; grows fairly luxuriantly on agar and glycerin agar, where it is seen to branch; invisible growth on potato; the bacillus is motile, has no capsule, and is not decolorized by Gram's stain. Inoculation experiments are at present being made.

DR. S. POLITZER gave a

DEMONSTRATION OF RINGWORM AND FAVUS CULTURES.

DR. PRINCE A. MORROW, of New York, read a paper on the

MODES OF INFECTION OF LEPROSY.

He stated that very little significance should be attached to infection through sexual intercourse.

It is quite possible that the mode of salutation of rubbing the noses which prevails in Iceland and Hawaii may have been partly responsible for the spread of the disease in those countries. The plague of mosquitoes and the plague of leprosy appeared in the Sandwich Islands about the same time, and a causal relationship has been claimed. Until recently numerous searches had failed to reveal the presence of lepra bacilli in mosquitoes. The writer discredits the part alleged to be played by the mosquito in the production of leprosy.

Leprosy usually occurs first upon the exposed surfaces, face, hands, etc. Many believe the skin to be the point of entrance of the germs. The probability is that there are many modes of infection, but the most frequent channel of infection is, according to the views of most leprologists, through the upper air passages. The writer believes inhalation to be a frequent cause. Blashko collected thousands of lepra bacilli upon plates placed in the immediate proximity of lepers. Certain conditions predispose to leprosy. Some individuals are absolutely immune. An individual predisposition seems to be the most important favoring factor. Catarrhal conditions of the upper air passages are also strong predisposing causes. Nearly all lepers give a history of a "cold" at the onset of the disease.

DR. S. SHERWELL, of Brooklyn, contributed

REMARKS ON THE TREATMENT OF SCABIES.

The writer condemns the treatment of scabies by irritant ointments of various kinds. He urges the adoption of a method which he declares is "better, cleaner and easier." The patient is instructed to take a thorough bath, after which sand soap is to be used upon the tougher portions of the integument. A half-teaspoonful of powdered washed sulphur is then rubbed over the entire skin surface. The same quantity should be placed between the bed sheets and shaken so as to evenly distribute the powder. This should be repeated for several nights, a cure being usually effected in a week. The writer has never seen a dermatitis follow this treatment. He also advises its use as a prophylactic measure whenever an individual is exposed to scabies.

Dr. J. N. Hyde, of Chicago, presented a paper entitled

A CONTRIBUTION TO THE STUDY OF BLASTOMYCETIC DERMATITIS.

The patient was a man of fifty-seven, with a tuberculous family history. Five years before he came under observation, he had upon his leg a pimple, which spread anteriorly. This healed up under treatment with the formation of a cicatriform tissue. Several years later a condition similar to that on the leg developed on the dorsum of the hand. This soon involved the entire dorsal surface of the hand extending on to the fingers. This area was the seat of a verrucous growth, sharply defined and with a reddish halo. There was slight secretion; no subjective phenomena. The condition resembled closely verrucous tuberculosis. A section was excised and blastomyces were found in the tissues. In many places the section looked like a squamous-celled carcinoma. There were also numerous miliary abscesses in the epidermis, in which alone the blastomyces were found. A bacillus of the diphtheria group was also present. The blastomyces when injected into lower animals produced abscesses. The patient improved considerably under the use of iodide of potash.

In all, seven cases of blastomyces in men have been reported. In six the skin alone was involved. Five patients were men and two women. The disease begins as a maculo-papule, later breaking down and suppurating. The dorsum of the hand and the anterior surface of the leg are the regions most frequently affected. The disease must be differentiated from verrucous tuberculosis and lupus vulgaris, to which it may bear a close resemblance, and also from the late syphiloderm.

Recent Literature.

A Text-Book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. For the Use of Students and Practitioners of Medicine. By Authur R. Cushny, M.A., M.D. (Aberd.), Professor of Materia Medica and Therapeutics in the University of Michigan Medical Department, Ann Arbor. In one handsome octavo volume of 728 pages, with 47 engravings. Philadelphia and New York: Lea Brothers & Co. 1899.

This is a modern treatise and so full of fresh thought that it is a pleasure to call the attention of the readers of the Journal to it. It is not often that one gets enthusiastic over a book on pharmacology and therapeutics, but no graduate in medicine can read this work without feeling an admiration for the subject. Perhaps the book seems to be such an advance over what we have used in the past for the reason that the knowledge of the subject has progressed rapidly and it has chronicled this advance. But this cannot account for all the differences. Pharmacology and therapeutics have here been simplified, and statements which have been copied from text-book to text-book for a generation have at last found their clearing house.

The writer appreciates existing relations between the pharmacist and physician. The former has done his work so well, the latter can employ his valuable time to better advantage than in the study of compatibilities, solubilities and similar portions of the pharmacopeia. Accordingly, attention is chiefly devoted to the actions and therapeutics of the different drugs, and this has been done in so clear, so concise, and so comprehensive a manner that the reader is charmed. The volume is a veritable treat in medicine. Its text corresponds so closely with what the author in his preface states to be his object in writing that we quote his words:

"My object has been to bridge over the hiatus which exists between the phenomena occurring in the normal organism and those which are elicited in the therapeutic use of drugs, to show how far the clinical effects of remedies may be explained by their action on the normal body, and how these may in turn be correlated with physiological phenomena. It necessarily follows that the subject is treated from the experimental standpoint, and that the results of the laboratory investigator are made the basis of almost every statement. Where these fail to elucidate the therapeutic effects, or even to suggest a possible explanation, I have preferred to leave the question undiscussed rather than to call on such occult *dei ex machina* as alterative or tonic actions."

In referring to the scope of the work he says, "It is true that the more advanced teachers of medicine have very properly abbreviated their lists of remedies until those generally employed may be enumerated in units where they were once counted in scores, but the student on going into practice meets numbers of drugs previously unknown to him, and not appreciating that these have already been tried and discarded by his teachers, is tempted to fall into the slough of unreasoning empiricism. . . . The period of constructive pharmacology has scarcely dawned; at present its chief function is destructive and critical." Though therefore the less important drugs are discussed, it is done in a succinct way, and by placing the text in another type, which, by the way, is most admirably suited to the purpose, the book escapes any censure of cumbersomeness.

"In dealing with each drug, I have attempted to unify the whole action by using the most distinctive feature as a centre around which to group the less important symptoms."

The classification follows that of Buchheim and Schmiedeberg and is most satisfactory, because it is so easily grasped by the student. The drugs are arranged in many groups, each named from its most prominent member or from some marked property possessed by all, and then these groups are united according to their mutual resemblances. A bibliography of the more important articles is appended to the discussion of each drug. There is no hack work in the volume. The articles are all monographs and surprisingly up to date.

Materia Medica and Therapeutics. An Introduction to the Rational Treatment of Disease, for the Use of Students and Practitioners of Medicine. By J. Mitchell Bruce, M.D., F.R.C.P., etc., Physician and Lecturer on Medicine at Charing Cross Hospital, London. New (sixth) edition, revised and enlarged. In one 12mo volume of 618 pages. Philadelphia and New York: Lea Brothers and Co. 1899.

The manner of publication and the plan of this work are so excellent that one is predisposed in its favor at the start. It has the advantage of having

been through five editions and in this its sixth, "revised and enlarged," the reader has a right to expect a finished text-book of materia medica and therapeutics. It should be free from errors and thoroughly up to date. We look through the sections on inorganic and organic materia medica, however, and are amazed to find no mention of drugs, some of which have been employed nearly a decennium and have proven themselves most useful. That a sixth edition of materia medica and therapeutics published in 1899 contains no description of trional, diuretin, dermatol (bismuth subgallate) creolin and tannigen seems past belief! Heroin, taka-diastase, orexine, urotropin and orthoform are similarly omitted. Recent introduction into medical practice cannot be pleaded in palliation, because the first edition of another book on pharmacology and therapeutics, coming from the same press this same year, gives details of each.

If it is with sins of omission we have to deal in the first two sections, it is with those of commission in the third, which is devoted to general therapeutics. The text is so plausible that it will all the more easily lead the student astray. In the section on the stomach we read: "We may provide, as the first part of the meal, substances, such as soup, which will be absorbed rapidly and stimulate the follicles to abundant secretion." The follicles may be so stimulated, it is true, but not by the absorption of liquids from the stomach which the work of von Mering and others has shown takes place to such a slight degree. On page 457 we read, "excess of the gastric juice is rare." Specialists on stomach diseases speak in quite another way. Einhorn goes so far as to say that in nearly one-half of all stomach patients hypersecretion is present. On page 495 a list of 19 direct cholagogues is given. This would be good news if it were true, but of these 19 there is but one — sodium salicylate — which recent work has shown to have any action of account on the secretion of bile, and even with this drug the matter is not definitely settled. On the other hand, bile itself, which has been proved to be far and away the best cholagogue, is referred to as "of doubtful value."

Some of these errors — which are merely examples of others — might be condoned in a first edition, but there is no excuse for the sixth edition of so good a book being so bad.

Die Verletzungen des Auges. By DR. E. PRAUN, of Darnstadt. Pp. 530. Wiesbaden: Bergmann. 1899.

An oasis in the desert of the year's ophthalmological literature. The author divides his volume upon injuries of the eye into a general and special part, the former being largely an exposition of theory, history and statistics, while the latter is a consideration of injuries of the different parts of the eye anatomically speaking. Dr. Praun is to be congratulated for presenting a subject ordinarily so difficult to handle categorically in at once so interesting and instructive a manner. The subject of expert testimony and the estimation of damage from the standpoint of Austrian and German statistics is carefully gone into, and in event of a translation into English, an analogous chapter based upon existing conditions in our own country might well be interpolated. The removal of foreign bodies, especially steel, from the interior of the globe, is explained with great care, and valuable rules applicable to the use of the hand and the "giant" (Haab's) magnet are timely, being, as they are, a comprehensive digest of a large literature. In the historical consideration of the extraction of interocular metal, the name of Bradford could with accuracy precede that of Hirschberg. The author does not intrude his literary references. The book is well printed, is furnished with a good index and is the first really good monograph upon this subject since the introduction of antiseptic surgery.

Ocular Therapeutics for Physicians and Students. By F. W. MAX OHLEMANN, M.D., Late Assistant Physician in the Ophthalmological Clinical Institute of the Royal Russian University of Berlin, etc. Translated and edited by CHARLES A. OLIVER, A.M., M.D. (University of Pennsylvania), one of the attending surgeons of the Wills Eye Hospital, etc. Pp. 274. Philadelphia: P. Blakiston, Son & Co. 1899.

This book is an attempt to collate the most important and useful formulæ in ophthalmology in a single volume and affords an interesting opportunity to become acquainted, as the author says in his preface, "with the methods of treatment in vogue both at home and abroad." This statement is hardly borne out by the contents, which is a summary of German methods of treatment, with an occasional allusion to the therapeusis of practitioners of other nations, more especially when such methods are unusual or striking.

To the American a book on ocular therapeutics which has no allusion to antitoxin treatment of diphtheritic conjunctivitis, to the use of protargol in gonorrheal ophthalmia, and classes the application of jequirity as equally dangerous and unpracticable as the old-fashioned inoculation with blenorrhagic pus, and suggests the use of preparations of lead in trachomatous pannus, seems to be somewhat old-fashioned.

Electro-Hemostasis in Operative Surgery. By ALEXANDER J. C. SKENE, M.D., LL.D., Professor of Gynecology in the Long Island College Hospital, Brooklyn, N. Y.; formerly Professor of Gynecology in the New York Post-Graduate Medical School; Gynecologist to the Long Island College Hospital; President of the American Gynecological Society, 1887; Corresponding Member of the British, Boston, and Detroit Gynecological Societies, of the Royal Society of Medical and Natural Sciences of Brussels, of the Obstetrical and Gynecological Society of Paris, and of the Leipzig Obstetrical Society; Honorary Member of the Edinburgh Obstetrical Society; Fellow of the New York Academy of Medicine; ex-President of the Medical Society of the County of Kings; ex-President of the New York Obstetrical Society. New York: D. Appleton & Co. 1899.

Dr. Skene believes in electro-hemostasis in operative surgery and in his book he almost convinces one that it is *the* method to be used for controlling hemorrhage. The book is the best treatise on this subject with which we are familiar, and is an excellent example of book-making. It will, however, be a long time, if ever, before electro-hemostasis supercedes the general use of ligatures. The results obtained by means of aseptic ligatures are so satisfactory that there can be no reason for change.

Saunders' Medical Hand-Atlases. Atlas of the External Diseases of the Eye, including a brief Treatise on the Pathology and Treatment. By Prof. Dr. O. Haab, of Zurich. Edited by G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia, etc. With 76 colored plates and six engravings. Philadelphia: W. B. Saunders. 1899.

This atlas of the external diseases of the eye is an admirable companion to Haab's "Atlas of Ophthalmoscopy and Ophthalmoscopic Diagnosis," favorably reviewed in these columns last year. It is always difficult to represent pathological appearances in colored plates, but this work appears to have overcome these difficulties in an admirable manner, and the plates, with possibly one or two exceptions, are absolutely satisfactory. The first 78 pages are given up to an exposition of methods of examination of the eye in disease. The text is simple and well adapted for the instruction of students in what to see and how to see it. Accompanying each plate are a few pages devoted to the description of the disease illustrated, its clinical history and an outline of treatment, which latter portion is distinctly up to date. The book is well printed, bound, and of a convenient size.

The Cerebro-Spinal Fluid. Its Spontaneous Escape from the Nose. With Observations on its Composition and Function in the Human Subject. By St. Clair Thompson, M.D., M.R.C.P., F.R.C.S. London, Paris, New York and Melbourne: Cassell & Co. 1899.

This is a book of 140 pages giving the results of a thorough study of the subject of the title. The work was inspired by a case in which a nearly continuous watery discharge from one side of the nose proved to be an escape of cerebro-spinal fluid. The author has collected and tabulated twenty reports of cases showing a more or less similar condition. The possibility and frequency of the escape of cerebro-spinal fluid from the nose has been in the past overlooked, a watery discharge being commonly described as nasal hydrorrhea due to a hypersecretion of the nasal mucous membrane. A knowledge that a watery discharge may come from the cerebral cavity should lead to an examination of the fluid. This book will be invaluable as a guide to any one who has occasion to study such a case. It is well written and interesting.

An Essay on the Nature and the Consequences of Anomalies of Refraction. By F. C. Donders, M.D., late Professor of Physiology and Ophthalmology in the University of Utrecht. Revised and edited by Charles A. Oliver, A.M., M.D. (University of Pennsylvania) one of the attending surgeons to the Wills Eye Hospital, etc. With portrait and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

The editor's work has consisted in writing the preface and in directing the make-up of the book, which is a beautiful specimen of the book-maker's art, in which the type, paper, size of page and style of binding have been most judiciously chosen.

With regard to the text the author says in his preface, in substance, that his effort has been to rescue this unique brochure, published more than thirty years ago in a comparatively infrequently used language, and to give a great man greater honor and his works an increased amount of usefulness.

A Practical Hand-Book on the Muscular Anomalies of the Eye. By Howard F. Hausell, A.M., M.D., Clinical Professor of Ophthalmology, Jefferson Medical College, etc., and Wendell Reber, M.D., Instructor in Ophthalmology, Philadelphia Polyclinic and College for Graduates in Medicine, etc. With 28 illustrations and one plate. Philadelphia: P. Blakiston, Son & Co.

The subject matter is an elaboration of a series of lectures delivered in successive winter courses at the Philadelphia Polyclinic. The authors have sought to clothe their thoughts in language easily understood, to avoid discussions and speculations and to emphasize methods which have stood the test of their own experience. The result is a book largely devoted to methods of examination and the proper interpretation of the results obtained. The pages devoted to treatment are well considered, conservative and clear.

American Medical Pocket Dictionary. Edited by W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania; Fellow of the American Academy of Medicine, etc. Containing the pronunciation and definition of over 26,000 of the terms used in medicine and the kindred sciences, along with over 60 extensive tables. Second edition, revised, pp. 518. Philadelphia: W. B. Saunders. 1899.

The essential features of the contents of this small, but comprehensive, volume are contained in its title. It fulfils its aim of crowding much matter into small space. It is conveniently arranged for reference, and most attractively bound in flexible leather. Numerous tables, many of them anatomical, add to its usefulness. It meets, no doubt, a growing want which we all feel more and more as medicine and hence medical terms multiply with the growth of specialism.

Retinoscopy in the Determination of Refraction at One Metre Distance, with the Plane Mirror. By James Thorington, M.D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Second edition, revised and enlarged, with 28 illustrations, 12 of which are colored. Philadelphia: P. Blakiston, Son & Co.

The first edition of this work was very favorably reviewed in these columns when it first appeared in 1897, and this edition is more plentifully illustrated and in every way sustains the previous reputation of the book as the best work on retinoscopy ever published.

A Compend of the Diseases of the Eye and Refraction, Including Treatment and Surgery. By George M. Gould, A. M., M.D., formerly Ophthalmologist to the Philadelphia Hospital, etc., and Walter L. Pyle, A.M., M.D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia, etc. Second edition revised and enlarged, with 109 illustrations, several of which are in colors. Pp. 293. Philadelphia: P. Blakiston, Son & Co. 1899.

This book is No. 8 of the series of "Quiz Compends" published by Blakiston, Son & Co., and has been reviewed before in this journal; it need not, therefore, be reviewed at length again.

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UNIFORMITY REQUIREMENT FOR LICENSE TO PRACTISE MEDICINE.

A FURTHER attempt is being made in Michigan by the Wayne County Medical Society to secure uniformity of requirements for license to practise medicine. We are in receipt of a circular from Dr. E. Amberg, the secretary of the committee appointed to investigate the matter, the gist of which is an effort to gain the co-operation of the various States of the country in providing uniformity of requirements leading to the privilege of practising medicine. To this end certain preliminary questions have been asked to sound medical opinion and up to September 14th answers had been received from thirty-six States and three Territories, for the most part favorable to some scheme of co-operation.

In general, we are quite in favor of any plan through the agency of which a higher general standard of medical education may be secured. There is every evidence that, as a profession, we need such a standard, and we hope this new effort may accomplish definite results. It is also well to bear in mind the difficulties in the way of a satisfactory solution of the question. In the first place, medical practice is so largely an art and so little a science that uniform standards are exceedingly difficult to establish. In the second place, the growing and inevitable tendency toward specialism is likely to render more and more vague the requirements within which practice should be allowed. Again, legislation in such matters is notoriously unsatisfactory, and very likely in the present state of public opinion to establish false standards, detrimental, on the whole, to medical progress. In this, as in many other matters relating to education, it seems to us that if any standard of value is to be established it must be fundamental, and begin with preliminary education. Schools of medicine, as through President Eliot's endeavors colleges of other sorts are coming to do, should demand a certain standard of preliminary training before a student is allowed to enter upon a medical course at all. Could such a preliminary uniformity of attainment be established we should have small fear for the standard when these same students enter the active practice of their profession. How far removed we are from this ideal may be gained by a glance at the requirements for admission to our medical schools the country over. We need first to reform our medical education, and when that is satisfactorily done uniformity of standard will be attained without recourse to legislation. We are therefore strongly of the opinion that the real question at issue is to regulate the character and attainments of the men who are about to study medicine, rather than attempt to legislate into positions of respect men who from the beginning were unfitted for the duties and responsibilities of their profession.

IMPROVED BUILDING LAWS FOR NEW YORK.

IN our issue of September 14th a note was published relative to the question of improved building laws for New York. The statement was made that the new building code, which has recently been prepared by the Building Code Commission, will tend to improve the construction of tenement houses. Our attention has been called to the fact that the concensus of the best opinion in New York is opposed to the new building law, which has received almost the universal condemnation of the press of that city. We do not wish to go into details regarding the various aspects of the question, but the importance of the general matter of tenement house reform justifies a brief restatement of the case. In general, the new code, it is stated, makes no adequate provision for more light and air in tenement buildings, and fails utterly to provide for the improvements in buildings which the study of the last few years has shown entirely feasible. The following editorial comments apparently place the matter in its true light. The *New York Tribune* writes:

"The essential demand of the Tenement House Committee of the Charity Organization Society was for more light and air in tenements. The present narrow, damp wells which pass for courts in tenement houses are an unmitigated evil, which no tenderness for the avarice of landlords should permit the city longer to tolerate. The committee asked that all houses erected hereafter should be required to have the courts not less than six feet wide at every point, and to contain an area of not less than 150 square feet. This was a reasonable rule. It reached the greatest evil of the tenement house in the only possible way. We must endure the old buildings already in existence, but there is no reason why we should pretend to reform tenement house construction unless we make the one requirement of new buildings without which not one of them is really fit for human habitation. Yet the Building Code Commission has ignored it, and has absolutely failed to say a word on the subject, but is ready to let every grasping landlord

go on filling this city with structures which are condemned by everybody but the rent gatherer."

The *Commercial Advertiser* makes the statement that "One of the worst features of the proposed code is that it threatens to put a stop to further progress in this city in the direction of tenement house reform. Not one of the important amendments that were suggested by the Tenement House Committee of the Charity Organization Society has been adopted. Among these were provisions that light and air shafts should have a minimum width of six feet; that tenement houses should have at least one bath-room for every twenty families; that tenement houses that were not fireproof should be limited to six stories in height; that wooden dumbwaiter shafts, a prolific cause of fire, should be prohibited, at least in wooden buildings; that ground-glass panels should be inserted in doors leading into dark halls, and that no chance should be allowed landlords to evade the law by erecting tenement houses and calling them apartment houses."

Wise legislation on this matter is evidently important not only for those who live in tenement buildings, but also as regards the general health of the city. Certainly no ulterior motives should stand in the way of the enactment of laws which will lead in the building of tenements to the greatest amount of light, ventilation and cleanliness consistent with the necessary economy which this poorest portion of the community is obliged to practise. That such building is possible is the firm conviction of the New York Charity Organization Society.

A NEW COURSE OF INSTRUCTION FOR THE ARMY HOSPITAL CORPS.

A recent addition to the curriculum at the schools of instruction for the men of the Hospital Corps, U. S. Army, consists in a course of cooking, having special reference to the preparation of diet for the sick. Instruction is given by trained female dietists and this, in scope and arrangement, is at present planned to include a series of fifteen lessons, of which twelve are progressive and three are reviews. The character of the work, which is entirely practical, is based on the idea that the cooking for the sick — such as the average hospital-corps man may be expected to perform — will be largely of an emergency character and with isolated and small commands and under conditions where supplies will be limited in variety. It is expected that at the larger hospitals, where great variety of supplies is possible, the members of the hospital corps in general will neither be required nor permitted to prepare food for the sick, such work preferably being delegated to the female dietists or the trained general cooks attached to such institutions. The object of instruction, therefore, is, first, to educate the recruit in the preparation of the various articles of the several rations, so as to render them more delicate, appetizing and suitable for the use of the sick; second, in the employment of the five articles which it is anticipated will form the hospital stores under the new supply table; third, in the preparation, in simple combination, of eight additional articles selected for their nutritive value, suitability for the sick, ease of preparation, palatability and probable availability in the field or at isolated stations. These additional articles are fresh milk, eggs, oatmeal, farina, chicken, canned soups, gelatine and fresh fruits; while the hospital stores include malted milk, condensed milk, beef extract, rice and chocolate. From these articles, together with the components of the several rations, eighty-six palatable, delicate and nutritive preparations or combinations have been selected for study, this number, it is believed, being sufficiently ample under all circumstances. The careful drilling of the men to make the most of the few articles which they are practically certain to have on hand is thought to be more advisable than to undertake the lengthy study of a large number of food stuffs, which, while eminently desirable, would probably not be available under the conditions in which the nurses of the hospital corps would be required to act also as dietists. The course begins with the preparation of liquid diet, and this is followed by instruction in preparing semi-liquid diet. During the last week of the course the articles of the ration are studied. The men appreciate the practical value of this work and take great interest in it, appreciating that while they are learning to provide for the sick they are also being placed in a position to take better care of themselves and their own food when in the field. In instituting this course Surgeon-General Sternberg has done much toward increasing the comfort of the sick and the efficiency of the army hospital service.

PRIZES OFFERED BY THE MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH.

The Massachusetts Association of Boards of Health, desirous of encouraging uniformity in the official procedures relating to contagious disease throughout this country, offers elsewhere, in the advertising columns, the first of a series of prizes designed to bring out the best and most practical solutions for certain knotty problems in everyday practice, the treatment of which, at the present time, varies considerably in different places. Non-members, as well as members, of the Association are eligible. The importance of the subject calls for the best efforts of those whose knowledge and experience may qualify them to give information and to make suggestions.

MEDICAL NOTES.

A New Danger. — An affection is said to have appeared in Paris due to the presence in bakers' bread of salts of lead deposited on the walls of ovens by the use of old wood as fuel. The Council of Hy-

giene explains that such wood is usually impregnated with sulphate of copper or creosote and is likely to give off poisonous volatile salts.

APPOINTMENT OF DR. A. B. RICHARDSON. — It is reported that Dr. A. B. Richardson, of Massillon, Ohio, has been appointed Superintendent of the Government Hospital for the Insane at Washington, to fill the vacancy caused by the death of Dr. W. W. Godding. Dr. Richardson is a graduate of Bellevue Hospital Medical College, of New York.

SOLITARY TUBERCLES OF THE HEART. — At the recent annual meeting of the Medical Society of California, Dr. A. W. Hoisholt reported an extensive involvement of the heart in a case of tuberculosis. The writer's statement of the unusual condition found is, in part, as follows: "The tuberculosis was evidently primarily located in the left pleura, and from here extended by contiguity to the pericardium, bronchial glands, ribs and sternum. The tuberculous pericarditis led to the development of subpericardial tubercles, which by conglomeration formed two large, solitary tubercles, one situated about the centre of the wall of the left ventricle, the other in the right auricle, below the arch of the aorta, the tuberculous process burrowing into the myocardium."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, October 11, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 84, scarlatina 28, measles 10, typhoid fever 53.

ENTHUSIASM FOR ATHLETICS. — It is reported that nearly 800 Harvard students are in training for various athletic events, a larger number than ever before.

PRECAUTIONS AGAINST TYPHOID FEVER. — Measures have been taken to prevent the possible spread of typhoid fever from contaminated milk coming from Westboro, Mass. The Board of Health has had the cans and utensils thoroughly sterilized and no further danger from this source is anticipated.

A BOSTON CITY HOSPITAL EMERGENCY STATION. — The Mayor of Boston has referred to the Board of Aldermen a communication from the President of the Board of Trustees of the City Hospital, recommending that a portion of the city's Haymarket Square land be appropriated as a site for an ambulance and a relief station under control of the hospital trustees.

VACCINATION IN REVERE AND LOWELL. — It is stated that owing to the prevalence of small-pox in Massachusetts and in Chelsea especially, the Board of Health of Revere has requested that those who have not been vaccinated within five years should avail themselves of the opportunity now offered. The local Board of Health of Lowell has also taken measures to have all the employees of the Hamilton Manufacturing Company vaccinated, one of whom was recently found to have small-pox in mild form.

NEW YORK.

FREE DISPENSARIES. — On September 28th the Committee on Dispensaries of the State Board of Charities, consisting of Dr. Stephen Smith, of New York, Dr. E. V. Stoddard, of Rochester, and Gen. S. W. Rosendale, of Albany, gave a hearing in New York on a tentative set of rules for the government of city dispensaries which they had formulated for adoption by the Board. Among those who took part in the discussion of the proposed rules were Edward T. Devine; secretary of the Charity Organization Society, Charles C. Savage, president of the Board of Managers of the Demilt Dispensaries, and a number of physicians representing various medical societies and dispensaries. One of the rules requires that all applicants for treatment shall sign a sworn statement of their inability to pay for medical services and also provides for the investigation of all suspicious cases. It was the consensus of opinion of those present that it would be necessary to establish a registration bureau which should act as a sort of clearing house for the different dispensaries of the city. Another of the rules provides that there shall be a minority representation of women on the managing boards of dispensaries incorporated independently of any other institution, and this gave rise to a considerable amount of discussion.

IMPROVED QUARANTINE INSPECTION. — Dr. Doty, Health Officer of the Port, sailed for Bremen on October 10th. His object in going abroad is to confer with health officers at foreign ports with a view to improving the present methods of preventing the embarkation of passengers infected with small-pox, typhus fever or other contagious diseases. Dr. Doty stated before leaving that the poorer class of immigrants from Russia was a constant source of anxiety in his department, and that the Bremen. officials should observe more care in their examination of steerage passengers from that port. He is strongly in favor of an international agreement for the inspection of emigrants.

INFANT MORTALITY IN THE BOROUGH OF BROOKLYN. — The excessive mortality among infants and young children in proportion to the general mortality which has been noted for some time past in the Borough of Brooklyn still continues.

TWO CENTENARIANS. — Martha Harlow died in Brooklyn on October 1st at the reputed age of one hundred and four years. She was born in Plainfield, Conn. Mrs. Ellen Graham Massvel, a cousin of John Lorimer Graham, who was postmaster of New York City during President Tyler's administration, died at Lakewood, N. J., on October 3d, aged one hundred and one years.

ARMY NOTES.

THE HOSPITAL SHIP "RELIEF." — The army hospital ship *Relief*, which recently left San Francisco for Manila, sailed without passengers and with the

minimum working strength of crew. This vessel was recently inspected by a board composed of officers of the army, navy and army transport service and was thought to have too high superstructure and too small coal capacity to render her use on long voyages desirable. Prior to her departure the force of hospital attendants attached to the ship was removed, as were also the one hundred and twenty-five hospital-corps men and female nurses which she was expected to transport for service in Manila. A considerable portion of her cargo was removed before sailing and this was replaced by a large additional supply of coal to meet possible contingencies. The *Relief*, on arriving at Manila, will hereafter serve as a floating hospital and will also be used for the transportation of the sick between the various islands of the Philippine group.

REPORT ON THE USE OF THE X-RAY. — Capt. W. C. Borden, assistant surgeon, United States Army, and professor of military surgery and surgical pathology at Georgetown University, is engaged upon a report to the Surgeon-General of the Army covering the use of the x-ray in the Spanish-American War. This report, which is to be very elaborate and profusely illustrated, will be of great value to surgeons, civil as well as military.

Miscellany.

GOLF AS A THERAPEUTIC AGENT.

POSSIBLY our enthusiasm for golf has over-reached itself. This, at least, would appear to be the opinion of the *Medical Press*, from which we quote the following:

"It has been said that every other man in America is now so addicted to Scotch ways and habits that he wears heather-tweeds, plays golf, drinks 'Scotch,' and says 'Hoots, mon.' Of such must be Dr. Irving C. Rosse, Washington, who contributed to the American Neurological Association a paper on golf from a neurological view-point. Medical men have their hobbies in sports and pastimes, and these are sometimes regarded with a professional eye and with a bias in their favor which is largely due to the man's own aptitude and predilections. We are told that here we have a royal road to physical exhilaration in a game that can be played all the year round, independently of atmospheric vicissitudes, during all the seven ages of man, by delicate young girls as well as by strong athletes, and even by decrepit old men, whose declining powers do not admit of severe exertion. We must, however, dissent from the statement that there is absolutely no danger attached to the game, and that consequently no accidents ensue. Dr. Rosse is evidently new to the game and knows little of its history, even its latest history, or he would know that fatal accidents have occurred, at least in Scotland, from golf-ball strokes.

"There is a great deal to be said in favor of golf for those suffering from heart lesions, arterial calcification or certain hysterical conditions, and undoubtedly as a medical adjunct it is not to be despised. Dr. Rosse, while enjoining moderation, alleges that benefit has been derived in some cases of cough, nervous asthma, and in affections of the bladder and prostate; but it is pre-eminently in functional nervous disease that our great Anglo-Saxon game is to be recommended both as a prophylactic and curative. As to its being a certain remedy for insomnia, there may be some doubt, as we have met, within the last few days on the golf course, a golfee who despite his golf exercise suffered from insomnia. A great deal might be said in favor of golf as a mental and nervous tonic, but not to the exclusion of other sports which have many of the same advantages. Undoubtedly it is a good thing for the physician to know from his own actual experience the physical requirements of different games, and their physiological uses. The use of golf as a remedy in the treatment of nervous ailments of a functional character, whether they affect the mental or visceral spheres, is worthy of all consideration."

ANNUAL REPORT OF BOSTON DISPENSARY.

THE statistics of this institution for the year ending September 30, 1899 are as follows:

The number of new patients treated at the Central Office is 29,089, classified as follows: Medical Department: Men, 3,272; women, 4,763; children, 4,429; total, 12,464. Surgical Department: Men, 1,726; women, 1,027; children, 679; total, 3,432. Skin Department: Men, 566; women, 628; children, 444; total, 1,638. Department for Diseases of the Nervous System: Men, 448; women, 1,405; children, 247; total, 2,100. Department for Diseases of the Throat and Nose: Men, 821; women, 1,010; children, 664; total, 2,495. Department for Diseases of Women: Women, 1,216. Diseases of the Eye: Men, 309; women, 619; children, 355; total, 1,283. Diseases of the Ear: Men, 213; women, 312; children, 242; total, 767. Department for Diseases of the Genito-Urinary System: Men, 2,566; women, 9; children, 4; total, 2,579. Department for Diseases of the Rectum and Anus: Men, 130; women, 57; children, 1; total, 188. Orthopedic Department: Men, 134; women, 115; children, 42; total, 291. Mental Diseases: Men, 25; women, 43; children, 13; total, 81. Dental Department: Men, 164; women, 149; children, 242; total, 555.

The number of visits made by patients, old and new, at the Central Office, is 78,306, classified as follows: Medical, 34,332; surgical, 42,974; total, 77,306.

The number of patients treated in the Districts is 14,823, including 348 cases of midwifery, classified as follows: Men, 2,873; women, 5,480; children, 6,470; total, 14,823.

The results of treatment in the districts are as follows:

Discharged, cured or relieved	13,386
Removed to hospitals	1,210
Died	243
Remaining under treatment	98
	14,937
Under treatment at last annual report	114
	14,823
The number of visits made by District physicians	23,231
The number of patients treated at the Central Office and in the Districts	43,912
The number of cases of midwifery attended during the year	348
The number of cases of midwifery attended since July, 1856	10,114
Whole number of patients since October, 1796	1,462,774
Whole number of patients since July, 1856	1,343,611
Average daily attendance at the Central Office	252
Largest number present in one day, March 6th	437
Smallest number present in one day, September 20th	94
Number of recipes put up at the Central Office during the year	82,771
Number of house recipes	70,432
Number of District recipes	12,339
Largest number of recipes put up in one day, May 15th	437
Smallest number of recipes put up in one day, September 20th	112

Correspondence.

REPORT OF THE CONDITIONS IN THE PROVINCE OF SANTIAGO, CUBA.

WASHINGTON, September, 1899.

MR. EDITOR: — The report of Chief Surgeon Havard, of the Province of Santiago, Cuba, for the year since the establishment of the military department of that name, is of unusual interest and importance. The report is largely a chronological summary of events, important from a medical standpoint, as they occurred during the past twelve months. After describing the precautions taken to ensure comfort and prevent the occurrence of yellow fever on transports returning with the troops of the Fifth Army Corps and enumerating the hospitals established for the shelter of the sick which were left behind, he says, in part:

While the Fifth Army Corps was embarking for the United States, several regiments of United States Volunteer Infantry, or so-called immunes, were arriving in the department; the Second early in August, then the Third, the Fifth and the Ninth all landing at Santiago, while the Fourth arrived somewhat later at Manzanillo. These regiments had been raised in the hope that a large majority of their members would be yellow-fever immunes and could safely spend the summer in the tropics; as a matter of fact, very little attention appears to have been paid to this question of immunity by recruiting officers, and from inquiries made of captains I doubt whether there were more than an average of three or four true immunes in each company; subsequent experience showed that these regiments suffered as much as other troops from tropical diseases.

The Eighth Illinois and Twenty-third Kansas also arrived in August, and finally the Fifth United States Infantry, in two battalions. The second battalion of the Fifth came from Tampa in the transport *Knickerbocker*. It had four cases of yellow fever, which were taken to the Yellow-Fever Hospital; the transport was sent back on August 31st to the United States, with Acting Assistant Surgeon Bat Smith on board, for disinfection, while the battalion itself was camped on a hill two miles from the city and kept under strict observation. No further cases developed. The *Knickerbocker* had carried troops before during the campaign, and been reported as suspicious.

As it was intended to quarter the Fifth United States Infantry in the Mercedes Barracks, a large, comfortable brick and stone structure, which Spanish troops had previously occupied, and during the war transformed into a vast and crowded hospital, measures were at once taken to clean, disinfect and repair them thoroughly. A large number of Cubans were employed on this work until November, when the regiment, or as much of it as could be accommodated, moved in. There was no room for the regimental hospital, which was kept outside under canvas; later this hospital was done away with, and patients needing hospital treatment were conveyed directly to the General Hospital, an objectionable course which later caused the infection of the General Hospital.

The Second Immune was at first camped on the Alameda, near the water front, and in the city, where it suffered very much from malarial and thermic fevers, and to some extent from yellow fever, at least 20 per cent. being constantly sick. In October it was removed to Songo, and then to the Holguin District, where its health improved very much. The Fifth Immune was camped on dry, stony hills fully 200 feet above the bay, and apparently in an ideal site, being supplied with excellent water; but the rate of sickness, especially malarial fever, remained very high, reaching 30 and 40 per cent. One reason assigned for this, and the only apparent one (besides the well-known injurious effects of living under canvas in the tropics), was the presence of marshy lakes on the Aguadores River, nearly three miles distant. The Eighth Illinois and Twenty-third Kansas was sent to San Luis, where they remained. San Luis is about twenty-five miles from Santiago and 700 feet above the sea level; experience has shown that it is one of our healthiest stations, and that although the troops there labored also under the disadvantage of living under canvas their rate of sickness was generally under 10 per cent.

The commissioned medical officers of the immune and other volunteer regiments were men, in most cases, of ordinary professional ability, and, in all cases, ignorant of their special duties as medical officers, so that there was much suffering and disease in these regiments which could have been prevented by abler and more experienced surgeons.

Much has been written about the epidemic of yellow fever which prevailed in 1898 among the United States troops, from the first case at Siboney on July 6th to the last one at the Yellow-Fever Hospital on the bay in November. All evidence tends to show that the number of cases was very large, and that after a time isolation became impracticable, so that whole regiments were exposed to the infection; thus, toward the middle of August, I inspected the Seventh United States Infantry, camped near Cuevitas, and reported to be in an unusually sad plight; out of 740, 300 were sick, 250 with malarial fever and diarrhea and 50 with yellow fever; many other soldiers were reported to have had yellow fever and recovered, although within ten days six patients had died, presumably of this disease. An attempt had been made to separate infected cases, but a very imperfect one, although under the circumstances perhaps the best possible. In many regiments cases were recognized and isolated, but in many others cases were doubtless overlooked and treated as malarial fever. The fact that at least 75 per cent. of all officers and men were incapacitated, that able-bodied surgeons were few and many of them inexperienced, explains what otherwise would appear like incompetency on the part of the medical department. The great majority of cases were of a mild type, with a mortality of less than five per cent., that is, hardly as great as that of malarial fever we were struggling against at the same time, and much smaller than that of our typhoid-fever cases. The probable reason for this is that all troops were under canvas, scattered over many hills and freely exposed to air, sun and abundant rains, conditions which are much more favorable to the development of the parasitic plasmodium than to the bacillus of yellow fever.

Early in November information was received of the existence of an epidemic of small-pox in the District of Holguin. A sanitary commission, of which Assistant Surgeon R. S. Woodson was president, was appointed November 5th and immediately sent to the spot for the purpose of isolating and treating all cases of small-pox and vaccinating all non-immunes at Holguin and in surrounding country. The members of this commission worked with great zeal and success until February 1st, when the epidemic was declared stamped out. About 1,300 cases of small-pox had been treated and 12,000 people vaccinated.

In order to carry out the instructions of the surgeon-general, a board of commissioned medical officers, of which Surgeon J. J. Archinard, United States Volunteers, was president, was appointed November 7th, in Santiago, to examine into the qualifications of acting assistant surgeons. It had been quite evident during the summer and fall that many of them, contracted with hurriedly to answer an urgent demand, lacked the education, training and experience needed to perform successfully the duties of medical officers, and that the interests of the service required their elimination. Several resigned on receiving notification to appear before the board; four others were found deficient and their contracts annulled as soon as their services could be spared.

Pursuant to instructions from Washington, a board was appointed, March 1st, to direct the work of disinterring the bodies of all dead American soldiers buried at the several battlefields and near the various hospitals in the vicinity of Santiago. It was found that, in all cases where soldiers had been buried without being placed in a box or coffin — and they were the vast majority — nothing but bones remained; these were gathered in a sheet and dipped into a strong solution of corrosive sublimate, then placed

in sawdust impregnated with the same solution; casket and box were then disinfected on the outside. All laborers engaged in this work were Cuban immunes; while at Siboney, disinterring the bodies of the men who had died of yellow fever, they were kept in camp and not allowed to return to their homes for the several days that the work lasted, and then only after disinfection of their clothing. This work continued for nearly two months, or until 1,091 bodies, that is, all those buried at the Bay Yellow-Fever Hospital, had been exhumed. As the season was then too far advanced, a large number of filled caskets could not be transported to the United States and are now kept in a shed, under proper guard, on the western shore of the bay. It is a most remarkable and melancholy fact that, of the bodies buried during the active period of the campaign and up to the time of re-embarkation of the Fifth Corps, 134, or over one-fourth, when exhumed, bore no name and gave no clue to their identity. This was specially the case on battlefields; thus at El Caney, there was a solid row of 40 unknown soldiers; but it also occurred at some of our hospitals, notably the large field hospitals first established near General Shafter's headquarters, where the necessary time and trouble to mark the graves should have been taken. This deplorable condition shows the necessity of adopting the German system of identification, the only effective one, whereby each soldier, on being mobilized for a campaign, is made to wear a medallion on which are engraved name, home, rank and regiment, suspended from a chain tied around the neck. So long as the skeleton endures, this medallion will remain fastened to the spinal column and yield its information.

A few words should also be said of the department medical supply depot. With such a large number of troops coming and going, garrisoning many posts, and so frequently transferred from one place to another, it may be easily realized that the work of supplying them was no small task. During the year there has never been any shortage in medical supplies; all the requisitions upon the surgeon-general were honored, so that medical officers in the department have been able to obtain, if not always what they wanted, at least what they needed. Some medical officers, fresh from civil life and accustomed to the almost exclusive use of a few drugs, would sometimes want these in excessive quantities and feel much aggrieved because such individual preferences could not be wholly indulged. It is also true that others were extravagant and wasteful in the use of all supplies, apparently under the delusion that there could be no limit to what was provided by the Government. There may have been, therefore, some dissatisfaction in certain quarters, but it was of the kind that, under the circumstances, was inevitable.

The general work of sanitation throughout the Province is well known and needs no description here. It is especially in the City of Santiago itself that it was carried on with system and thoroughness, under the supervision of four medical officers whose principal duty was to make house-to-house inspections.

The careful, everyday cleaning of Santiago had raised the hope that yellow fever would probably not break out this summer, except, perhaps, in a few sporadic instances; this hope was doomed to disappointment. On June 15th an American civilian was found with yellow fever in a dirty lodging-house where he had slept for several weeks, in Enramadas; he was conveyed to the Yellow-Fever Hospital, where he died the next day, the post-mortem examination confirming the diagnosis. On the 16th five enlisted men from the Fifth Infantry, under observation at the General Hospital, were also taken to the Yellow-Fever Hospital, two from the band quarters, one from the guard-house, one from the commissary storehouse and one from the city. On the 17th another case occurred in the guard-house; on the 18th one more in the guard-house and another in some other part of the building. It had become almost certain that the Fifth Infantry Barracks were infected in several places, especially the guard-house and band quarters. These had been vacated on the 17th, and orders issued prohibiting all enlisted men to leave the limits of the post. On the 19th when all doubts had been removed, the necessity to vacate the entire barracks was urged upon the commanding officer, recommending that, of the four companies, three and the band be sent at once into the country, and only one company kept on the outside parade grounds, as far as possible from the barracks. The commanding officer, in the absence of the department commander, stated that there were special reasons for keeping as many troops as possible in or near the city and that he could only spare two companies. Accordingly an order was issued on the 20th for the immediate evacuation of the barracks; Companies M and C were sent, after disinfection of clothing and baggage, to a camp on the Morro road, two miles away, while Companies A, G and band remained on the parade ground, well outside the barracks. It may be here stated at once that, with one or two exceptions which can be accounted for, no new cases developed in Companies M and C. But it was different with the other two companies, which, either from imperfect disinfection or reinfection due to the proximity of the barracks, continued to furnish several cases every day. It became evident that they must be moved again and farther away; the order was issued on the 30th, directing them to proceed by rail to Boniato, five miles north of the city, after fresh disinfection. This practically put an end to the fever among the troops, as no new cases developed five days after the establishment of the camp. Worth mentioning is the fact that the company of infantry and prisoners at Morro Castle, the oldest structure on the island, guarding the entrance to the bay, have always enjoyed excellent health and never had a suspicious case. The disinfection of clothing and baggage referred to was especially effected on the disinfecting ship of the Marine-Hospital Service, under charge of Surgeon Parker, who always gave us his most cordial and efficient co-operation. To a more limited extent, it was also carried on in the disinfecting steam chest of the General Hospital and an improvised formaline chamber.

Officers and soldiers were not the only sufferers in this epidemic; American civilians, mostly Government employees, and a few Spaniards, were likewise attacked, cases occurring in hotels, lodging-houses and even private houses, so that, by the end of July, at least a dozen distinct foci of infection could be traced.

The several reasons advanced to explain this epidemic, such as the disinterment of yellow-fever bodies, the digging of streets to lay pipes, etc., I am not inclined to attach much importance to. That the germs have always been present in many places is incontestible, but it seems probable that their degree of activity depends much upon climatic conditions. This year, in this district, was remarkable for the dryness (or rather absence of rain) and intense heat of winter and spring, and this unusual heat, I am disposed to think, was the principal factor in developing and energizing the bacillus so early in the season.

General conclusions. — In my opinion, there is no such thing as acclimatization in Cuba for North American soldiers; a few months, or even a year or two, will give them no immunity whatever against tropical diseases, and may benefit them only by teaching the absolute necessity of temperate habits. Only one thing immunizes against yellow fever, and it is an attack of the disease. Malarial fever prevails all over the province and no white or colored American soldier is safe against it; it decreases somewhat in the winter months, but much less than had been expected, while altitude, if more than 300 or 400 feet, has a distinct effect upon it. All American troops coming to Cuba, at any season, will suffer more or less from malarial fever and other tropical diseases, especially if camped under canvas, being then exposed to many great and sudden changes of temperature; thus, during the winter, the Fifth Immunes, in tents, had a rate of sickness at least twice as great as that of the Fifth Regulars, in barracks. It seems possible, by building comfortable barracks on high and salubrious sites, to reduce malarial fever to a minimum of three or four per cent. As to yellow fever, it may break out in any town in spite of all ordinary precautions, and soldiers can only avoid it by remaining in the country, either in barracks or in tents.

METEOROLOGICAL RECORD

For the week ending September 30th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...24	30.32	58	66	49	69	77	73	S.W.	S.	4	9	O.	C.	
M..25	30.06	64	75	54	92	99	96	S.W.	E.	4	9	O.	O.	
T...26	29.76	64	70	59	97	90	94	E.	S.	10	9	G.	F.	.16
W..27	29.97	58	65	50	81	70	76	S.W.	S.W.	12	11	F.	C.	
T...28	30.23	58	70	46	69	70	70	S.W.	S.	4	11	C.	C.	
F...29	30.10	63	72	54	78	89	82	S.	E.	12	6	O.	O.	
S...30	30.04	53	61	45	81	57	69	W.	W.	15	8	O.	C.	1.36
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 30, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1080	417	11.16	10.62	4.95	1.44	2.34
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	364	129	11.61	14.85	3.24	1.89	4.86
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	203	81	16.17	8.82	6.37	2.94	4.41
Baltimore	506,389	181	56	20.35	12.65	5.50	—	2.75
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	102	43	24.75	3.96	9.90	12.87	99
Washington	277,000	115	39	18.92	8.60	6.88	4.30	6.02
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	50	22	26.00	10.00	12.00	6.00	2.0
Nashville	87,754	35	11	17.16	8.53	11.44	5.72	—
Charleston	65,165	35	14	14.30	11.44	8.58	5.72	—
Worcester	108,240	24	12	16.66	4.16	12.48	—	4.16
Fall River	95,919	41	24	29.28	21.96	24.40	2.44	—
Cambridge	89,724	28	18	25.00	7.14	10.71	3.57	10.71
Lowell	88,644	37	15	21.60	13.50	13.50	2.70	—
Lynn	68,703	17	2	11.76	5.88	11.76	—	—
New Bedford	68,340	20	8	20.00	—	15.00	5.00	—
Somerville	68,101	20	7	20.00	5.00	15.00	5.00	—
Lawrence	57,263	24	10	33.33	16.66	16.66	—	16.66
Springfield	56,501	14	3	14.28	14.28	—	14.28	—
Holyoke	43,424	12	8	33.33	16.66	25.00	—	8.33
Brockton	37,278	10	4	20.00	10.00	—	—	10.00
Salem	36,883	8	1	25.00	—	12.50	—	12.50
Malden	34,613	11	2	—	9.09	—	—	—
Chelsea	33,468	9	2	—	11.11	—	—	—
Haverhill	32,022	9	3	—	—	—	—	—
Gloucester	30,589	7	3	—	—	—	—	—
Newton	29,716	4	1	—	25.00	—	—	—
Fitchburg	29,438	8	2	12.50	—	—	—	12.50
Taunton	28,167	14	—	21.42	28.56	14.28	—	7.14
Everett	25,338	13	2	23.07	7.69	—	7.69	—
Quincy	23,549	4	1	25.00	—	25.00	—	—
Pittsfield	22,643	3	—	—	—	—	—	—
Waltham	22,296	3	—	—	—	—	—	—
North Adams	20,971	1	—	—	—	—	—	—
Chicopee	17,842	7	3	14.28	14.28	—	14.28	—
Medford	16,511	7	1	—	—	—	—	—
Newburyport	14,915	4	1	—	—	—	—	—
Melrose	14,632	3	1	—	—	—	—	—

Deaths reported 2,545; under five years of age 952; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 308, consumption 276, acute lung diseases 206, diarrheal diseases 175, diphtheria and croup 80, typhoid fever 73, whooping-cough 24, cerebro-spinal meningitis 11, measles 9, scarlet fever 4.

From whooping-cough New York 11, Philadelphia 5, Providence 3, Boston 2, Pittsburg, Fall River and Cambridge 1 each. From cerebro-spinal meningitis New York 5, Boston 2. Philadelphia, Baltimore, Providence and Worcester 1 each. From measles New York 9. From scarlet fever New York 2, Boston and Brockton 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 23d, the death-rate was 20.6. Deaths reported 4,506; acute diseases of the respiratory organs (London) 138, diarrhea 673, diphtheria 87, fever 81, whooping-cough 48, measles 41, scarlet fever 31, small-pox (Hull) 3.

The death-rates ranged from 8.5 in Swansea to 28.6 in Sunderland; Birmingham, Bradford 17.2, Cardiff 16.8, Gateshead 26.4, Huddersfield 10.6, Hull 21.8, Leeds 21.5, Liverpool 27.9, Manchester 26.4, Newcastle-on-Tyne 27.6, Nottingham 22.7, Portsmouth 19.7, Sheffield 26.0, West Ham 21.0.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 30, 1899.

F. B. HANCOCK, assistant surgeon, detached from the "Eagle," and when relieved, ordered home to wait orders.

C. A. CRAWFORD, assistant surgeon, detached from the "Massachusetts" and ordered to the "Eagle."

R. S. BLAKEMAN, passed assistant surgeon, promoted to passed assistant surgeon from May 27, 1899.

L. G. LOUIS, pharmacist, retired from September 30th.

E. EAGLING, pharmacist, ordered to the Naval Hospital, Yokohama, Japan, immediately.

M. C. DRENNAN, medical director, detached from the Naval Recruiting Rendezvous, Philadelphia, Pa., and ordered to Washington, D. C., October 11th, for examination for retirement, and then home and to wait orders.

E. J. GROW, assistant surgeon, detached from the "New Orleans" and ordered to the "Massachusetts" immediately.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Clinical Medicine, Pathology and Hygiene will hold its meeting at 19 Boylston Place, Wednesday, October 18, 1899, at 8 P. M.

At 8 o'clock: Dr. J. L. Morse will report "Some Unusual Cases of Angioneurotic Edema in Infancy."

At 8.15 o'clock: Dr. M. P. Smithwick, "Nitrate of Silver in Hyperchlorhydria."

At 8.30 o'clock: Dr. R. W. Greenleaf will present a paper entitled "The Psychic Factor in Disease." Dr. E. W. Taylor will open the discussion.

H. F. VICKERY, M.D., *Chairman.*
J. BERGEN OGDEN, M.D., *Secretary,*
Harvard Medical School, Boston.

CORRECTION.

Dr. C. W. Townsend writes that he does not recommend "warm butter" for hastening the process of desquamation in scarlet fever, as erroneously stated in our issue of October 5th, p. 348, second column, but does recommend warm baths.

RECENT DEATHS.

HENRY C. CUNNELLY, M.D., health warden of the city of Hoboken, N. J., died on October 1st, at the age of thirty-eight. He was a native of Hoboken, and a graduate of Bellevue Hospital Medical College in the year 1886.

JOSEPH H. SMITH, M.D., who was at one time physician at Sing Sing Prison, and later at Dannemora Prison, died at Plattsburgh, N. Y., on October 4th, aged seventy-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Archives of the Röntgen Ray, February and May, 1899.

The Annual Report of the Health of the Imperial Navy for the year 1896. Tokyo.

A Case of Large Solitary Tubercle of the Heart. By A. W. Hoisholt, M.D., Stockton, Cal. Reprint.

Transactions of the American Climatological Association for the year 1899. Vol. XV. Philadelphia. 1899.

Study of Some Conditions that Lead to Fibroid Changes. By Willis S. Anderson, M.D., Detroit, Mich. Reprint.

Umbilical Hemorrhage, with Report of Two Cases. By H. Brooker Mills, M.D., Philadelphia. Reprint. 1899.

The Facial Nerve in its Relations to the Aurist. Reflex Cough. By George L. Richards, M.D., Fall River, Mass. Reprints. 1899.

The Ninth Annual Report of the Eye, Ear, Nose and Throat Hospital of New Orleans, La., January 1, 1898 to December 31, 1898.

American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A.M., M.D. Second edition, revised. Philadelphia: W. B. Saunders. 1899.

Original Articles.

ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE SURGICAL INTERVENTION.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

I HAVE chosen the subject of abdominal emergencies, not only because it is one of wide interest and because so many questions connected with treatment are still unsettled, but because the initial symptoms which attend abdominal emergencies are first observed by the general practitioner, and must be interpreted first by him. Upon his common sense, his experience, skill and judgment, will in many cases depend the result, influenced as it must be by the decision of a moment.

This subject is always opportune for at least one reason — that even to-day, after years of discussion and of experience, acute abdominal lesions still possess a deplorable mortality. That there must always be a considerable mortality cannot but be expected. That such a mortality is theoretically unavoidable, however, must be emphatically denied. The lesions to be considered are with one or two exceptions curable; but the outlook varies with the promptness of intervention. They are practically all fatal if left to themselves. Intervention, to be successful, must be early; so early that no man, skilful and experienced though he may be, can more than hazard a guess as to the exact nature of the lesion. The discussion is therefore narrowed down to a consideration of symptoms rather than diagnosis — initial and obscure symptoms rather than late and positive diagnoses.

Unfortunately, at the critical period of invasion, the patient is not always seen even by the family physician, and too often the favorable moment for operation is lost. Moreover, even when seen in season, the case often presents features by which its gravity is masked. Too often, it must be admitted, symptoms of the gravest nature are misinterpreted by even the most experienced observers, or, if understood, are watched in the vain hope that they are not so bad as they seem. Finally, it must be added, the dangers of the operation itself, even when skilfully performed, are by no means small.

It is obvious that the first and most important factor in a specific case is loss of time; for the remedy cannot be suggested or applied with any degree of success unless an early opportunity to do so is given. The loss of time dependent upon the patient or his friends can hardly be prevented. Yet it is questionable whether it would be wise to disseminate widely the initial symptoms of so common and serious an abdominal disease as appendicitis; for if we should do so, to the nervous and apprehensive every transitory colic would be the signal for great alarm. On the other hand, ought not a word to be said condemnatory of those lay journals which lead to the popular belief that appendicitis is a fad — a belief that encourages families to withhold surgical aid which in hundreds and hundreds of patients offers the only chance of recovery? I am impressed every day by the reckless disregard of professional warnings, when I see patients dying of appendicitis, not as the result of operation, but as the result of delay on the part of friends, who, thinking the disease a fad and the operation unnecessary, had refused to have a surgeon until it was plain to the layman, even, that the patient was dying. Fortunately, however, the onset of acute abdominal lesions that must be treated surgically, if at all, is so ominous of disaster that even the layman is usually alarmed.

Before discussing those symptoms of peritoneal invasion by which acute abdominal lesions first manifest themselves, it seems worth while to pass in review the lesions themselves. They comprise all diseases of the abdominal organs which may suddenly, with or without warning, place life in jeopardy.

Acute abdominal emergencies, as I have observed them, comprise three general groups:

I. Those in which hemorrhage is the chief factor.
II. Those in which peritonitis is the chief factor.
III. Those in which intestinal obstruction is the chief factor.

These three classes include almost all possible emergencies. Certain lesions may belong to more than one group — for example, lesions which, like volvulus, cause, first, intestinal obstruction, and later, necrosis of the intestinal wall.

I. Abdominal hemorrhages are either
  (1) Post-operative.
  (2) Traumatic.
  (3) From ruptured extra-uterine pregnancies.
  (4) From ruptured hemorrhagic cysts.
  (5) From gastric ulcers.

II. Peritonitis may be owing to
  (*a*) Extravasations from intestinal tract occurring in
    (1) Appendicitis.
    (2) Perforating gastric ulcers, benign and malignant.
    (3) Perforating intestinal ulcers.
      Tubercular and simple.
      Cancerous.
      Typhoidal.
    (4) Trauma.
      Rupture of intestine.
      Stabs.
      Gunshot wounds.
  (*b*) Extravasations from other viscera occurring in
    (1) Acute cholecystitis.
    (2) Pancreatic necrosis.
    (3) Rupture of bladder.
  (*c*) Rupture of abscesses.
    (1) Of the liver.
    (2) Of the kidneys.
    (3) Of the Fallopian tubes.
    (4) Of other regions.
  (*d*) Ovarian and other tumors with twisted pedicle.
  (*e*) Acute pancreatitis and fat necrosis.

III. Intestinal obstruction with necrosis may be owing to
    (1) Internal strangulation.
    (2) Volvulus.
    (3) Intussusception.
    (4) Mesenteric embolism and thrombosis.
  Simple obstructions without necrosis may be owing to
    (1) Bands.
    (2) Foreign bodies, including enteroliths.
    (3) Pressure from tumor external to the intestine.
    (4) Strictures of the intestine.

In addition to the foregoing there are certain gen-

[1] An oration before the Maine Medical Association, June 8, 1899.

eral infections without local causes; such are the forms of rheumatic and chemical peritonitis; peritoneal manifestations of general septicemias.

Other acute abdominal lesions may cause violent disturbances, attended by severe pain, chief among which are hepatic and renal colic. Among the more unusual lesions are acute pancreatic diseases, — hemorrhage, suppuration, and fat necrosis, — mesenteric embolism and thrombosis. These conditions are rare, but their possibility must be borne in mind. In practically all the diseases enumerated above there is a possibility of cure if the remedy is applied early enough. In some the prognosis is extremely favorable; in others recovery is rather a hope than an expectation; in all the favorable moment for intervention is at the very beginning of the symptoms.

My experience in acute abdominal surgery has been large enough to impress me deeply with the difficulties and the importance of this subject. By far the largest number of deaths in the general surgical practice are due to some intra-abdominal cause. One might almost say, with reference to surgery of the comparatively young and strong, that barring deaths from peritonitis already existing at the time of operation there is practically no mortality in general surgery to-day. Yet in many of the lesions under consideration the mortality is still excessive.

I have not searched exhaustively the records, but the following is an approximately correct summary of my experience. The number of deaths is, I think, accurate, for naturally they made a deep impression upon me.

Of post-operative concealed hemorrhages, I have had one case, from slipping of a ligature after ovariotomy for a small cyst. The patient was pulseless. After intravenous infusion of salt solution the abdomen was reopened and the bleeding artery tied. Recovery followed. I have had several cases of post-operative hemorrhage in which the abdominal wound was open. In these the nature of the accident admitted of no doubt and clearly indicated the proper remedy.

Extra-uterine pregnancies have furnished the greatest number of intra-abdominal hemorrhages. The number of deaths has been seven, of recoveries between 20 and 30. As in the other lesions, the deaths chiefly interest us. Of the seven patients, two died before I arrived at the house. Two were beyond help when first seen. These two I should now operate on, after filling the veins with salt solution. Three died after operation. Two of these three cases were desperate, and recovery was hardly expected; the third was a favorable case that was infected at the time of operation, the preparations having been, from the necessity of great haste, imperfect.

There have been two cases of hematosalpinx in which no evidence of pregnancy could be found. Both patients recovered.

I have seen two cases of excessive hemorrhage from gastric ulcer — one ten years ago and one recently. The first patient died suddenly in the course of a suspected gastric ulcer from combined perforation and hemorrhage; the second recovered under palliative treatment.

In appendicitis, the most important lesion because the most common, I have had 904 cases of all varieties, with 103 deaths. In 331 of the acute cases treated by operation, 72 died; of 189 acute cases not operated upon, 31 were moribund. In 238 cases of chronic appendicitis in which operation was performed in the interval, there was no death. Removal of the appendix may therefore be said to be, by itself, an operation of slight mortality. It is, moreover, safe to assert that nearly all of the 103 fatal cases, some of which were operated upon and some of which were not, would have recovered if the surgical intervention had been early enough. This condition is based upon various considerations that cannot be discussed at this time. Had all the patients been operated upon at the time of the initial pain, the vast majority would have recovered.

Extravasations from gastric ulcers have been ex tremely few, considering the frequency of this lesion All have been recent cases; two in Brockton in patients apparently well, though not without certain gastric symptoms. One patient recovered after suture of the perforation; the other, after she had entered well upon convalescence, died from a second perforation. Two other cases came to my attention recently at the Massachusetts General Hospital. Both were clearly perforations from gastric ulcers. Both patients died after exploration. In neither case was the outlook encouraging, but intervention seemed on the whole best. I did not see either operation, but the lesions were such as to have permitted recovery had the remedy been applied sooner. As it was, they were operated upon at the earliest practicable moment. Perforation from a cancerous ulcer I have seen but once. In this case an infection of the lesser omental bursa was drained successfully through an intercostal space in the left side, low down, but the patient in a few days succumbed.

From intestinal ulcerations I have seen two perforations, both fatal. One was from a benign ulcer of the transverse colon. The necessity for intervention was immediately recognized, and the abdomen opened. The abdominal cavity was, however, filled with fecal matter, chiefly beans. The wound was drained, suture being impracticable. The patient did well for a week, and then succumbed to a renewed extravasation. The other case was extravasation above a cancerous stricture. In this case the patient died after cleansing of the peritoneal cavity and drainage.

I have never met with a perforation of typhoidal ulcer, though there have been one or two at the Massachusetts General Hospital — one successfully operated upon.

From traumatism I have seen several interesting cases of perforation of the intestines, all but one fatal. In one case the lesion was caused by a piece of flying steel, not half the size of the finger-nail. The intestine was wounded, and there was considerable fecal extravasation. The wound was found and sutured, but the patient did not escape a fatal general peritonitis. In another instance an insane patient thrust his silver-plated dinner-knife up his rectum, which it perforated. I removed the knife from the abdominal cavity, which was extensively infected. The patient succumbed to shock in a few hours. In several instances of stabs recovery has followed exploration, the intestine being intact. In one instance death followed the exploration of an infected abdomen after rupture of the intestine by a kick. In several the patient was moribund from a similar lesion, caused by the passage of a heavy team over the body. In one instance a boy recovered from this

accident, but he died later from an operation by another surgeon to close the resulting fecal fistula.

But one case of gunshot wound has come to operation by myself, though I have seen several operated upon by others. In my case the stomach was grazed and the colon perforated. Recovery followed operation. In two cases of gunshot wounds the liver and kidney were perforated. In one the right kidney was removed; in the other the right kidney was drained. In the former case the patient died and in the latter the patient recovered.

Acute cholecystitis has furnished some 17 examples of local infection, one or two of which later became general. In none of them was there a perforation, but in several the gall-bladder wall was on the point of rupture. This has been a most brilliant field, both for diagnosis and for treatment, all but three of the cases recovering after drainage.

Acute disease of the pancreas has been suspected in several cases, but demonstrated in none.[1] In one instance there was a retroperitoneal hemorrhage about the pancreas, but its source could not be determined. The patient died some days after exploration. In one instance an epigastric abscess suggested a pancreatic origin. Recovery followed drainage, and the etiology was never determined.

Rupture of the urinary bladder has come to my notice twice. In both cases the rupture was extraperitoneal and received only drainage.

I do not recall any instances of the rupture of abdominal abscesses other than appendicular or tubal. Such accidents may of course occur, however, and must be considered. Pelvic abscesses, owing to infections of the Fallopian tubes, have presented numerous deplorable examples of rupture and general peritonitis. The mortality has been great when rupture has taken place spontaneously. Even after laparotomy and drainage, the mortality has been considerable. Next to appendicitis, this cause has contributed the largest number of deaths.

In one or two instances sloughing fibroids have given rise to alarming symptoms, which prompt intervention has relieved. Fibroids, complicated by pelvic abscess, have presented a large mortality. Other abscesses may occur when little suspected. They present a source of infection which must be borne in mind. In two instances I have found a large tubercular abscess of the mesentery, in one an acute tuberculosis of the mesenteric glands, which I diagnosticated as acute appendicitis. All three patients recovered.

Localized peritonitis, dependent upon extravasations of unusual origin, occasionally occurs. In one case a patient developed epigastric pain after swallowing a gold pencil, an open safety-pin of large size, a steel crochet-needle and a paper of pins. Removal of the safety-pin, which was found sticking through the pylorus, was followed by recovery. In another case I found a large epigastric tumor of septic origin, in a girl who had been in the habit of swallowing rubber gum, after chewing it. Drainage was followed by recovery, though no gum was found.

Intestinal obstructions, dependent upon causes which must produce intestinal necrosis, are among the most important of abdominal emergencies. The mortality in my experience is deplorable, and especially so because of the essentially favorable issue to be expected by early intervention. Of internal strangulation with necrosis, I have seen at least two, both fatal. In one five feet of small intestine was resected; in the other the patient was moribund; in both a general peritonitis was in full progress. In another instance the symptoms of acute obstruction were found after laparotomy to be dependent upon a strangulated inguinal hernia which could not be detected before operation. Contrasted with these are at least six external strangulations with gangrene of the intestine. In all but one recovery followed resection of the gangrenous intestine. General peritonitis was absent in all these cases, and hence the good results.

I have had but one case of volvulus. This was in a man suffering from an idiopathic dilatation of the sigmoid flexure. The twisted coil filled the abdomen. It was untwisted and fixed in proper position by means of sutures, with six months' relief. Recurrence of the twist required resection of the enormously dilated coil. The patient has been perfectly well since.

Of intussusceptions I have seen half a dozen cases. All that I have operated upon, or in which I have assisted at the operation, have resulted fatally. Of operations by my colleagues at the Massachusetts General Hospital two cases (Warren's) have recovered; also one by Brooks and one by Harrington. In the fatal cases the operation was too late.

Cases of mesenteric embolism and thrombosis have always been suspected rather than demonstrated. All my own cases have been fatal. One brilliant case (Elliot's) I had the opportunity of seeing. In this case the patient recovered after the removal of four feet or more of gangrenous intestine.

Simple obstructions without intestinal necrosis should present the most favorable outlook. Yet, unfortunately, this class of cases has had a high mortality. As the alarming symptoms of gangrene and general peritonitis have not been persistent these cases have been allowed to go on, until the patient has been so reduced by simple obstruction that he could not survive even a rapid operation. In one case of operation for obstruction by a band, in an old man, death followed from shock. In another the band divided at operation probably had no etiological influence, but the operation was fatal. In another nothing was found, but recovery followed. In still another, operated upon by another surgeon, nothing was found, but the exploration was fatal.

One case of operation for intestinal obstruction by gall-stone was quickly fatal from shock, the patient, a man of sixty-five, being extremely reduced by long obstruction. Another, operated upon by my first assistant, Dr. Brewster, was caused by a mass of hair in the small intestine. The obstruction had gone on for two weeks. The child was so feeble that she died a few hours after a rapid and successful operation.

[1] The difficulties of diagnosis are well illustrated by the following case, seen July 16th, some weeks after reading this paper: A girl of fifteen was suddenly seized with pain in the epigastrium extending over the abdomen. There was profound shock, great tenderness in the epigastrium, and prominence, with vomiting. There had been no history to suggest gastric ulcer or appendicitis, though she at times had epigastric pain before breakfast. Though the patient seemed hopelessly infected, I decided to open the abdomen in the epigastrium, in hopes of at least giving exit to the extravasation, if the patient's strength would not permit repair of the lesion. Having seen several atypical cases of acute perforative gastric ulcer, I expected to find perforation of the stomach. The incision led me straight to the source of the extravasation — an acute hemorrhagic pancreatitis with fat necrosis. Much to my surprise, the patient recovered from the operation. She did well for four weeks, during which time there was an excessive discharge of pancreatic fluid, masses of fat and necrotic tissue. On July 31st she died suddenly. There was no autopsy. This was evidently a lesion in the epigastric region immediately threatening life — demanding, as the only chance for cure, prompt intervention. No diagnosis was possible. The real lesion was not even suspected, for acute hemorrhagic pancreatitis seemed a disease which was not in the least likely to occur in so young a girl.

Obstruction caused by the presence of tumors has been very rare. In one case a tumor of the inner wall of the cecum (a lipoma) caused an intussusception. The intussusception was reduced and the tumor removed by incision into the cecum. The patient died in a day or two. I have seen partial obstruction due to the presence of tumors. In such cases the mortality has been simply that of the removal of the tumor.

Resections for obstructions from stricture of the intestine suddenly plugged have been encouraging. Even after the removal of large portions of the intestine, recovery has been the rule. Death has in my practice occurred in but four instances, in one case after removal of a large solid ovarian tumor through which the descending colon ran; in another after resection of a tubercular stricture of the small intestine in a young girl; in a third after removal of a carcinoma of the descending colon in a patient with general peritonitis; in a fourth, an old lady, after resection of the splenic flexure of the colon, though the joint was perfect and there was no peritonitis. Treatment of acute symptoms, caused by the sudden stoppage of a stricture, has been almost invariably successful when an artificial anus has been made.

Among the resections of the intestine for various causes which I have performed may be mentioned three cases of resection of the ileocecal valve, a complete resection of the sigmoid flexure for idiopathic dilatation of the colon, besides the case already mentioned in which resection was performed for chronic volvulus. One resection of the pylorus for cancerous stricture, four pyloroplasties for benign stricture, and one total extirpation of the stomach, all have been successful, though in the two malignant cases the patients died eventually of recurrence.

Not included in the foregoing are those emergencies dependent upon certain unusual peritoneal infections. Among them there have been several of peritonitis, in which no cause could be found at post-mortem section — cases belonging to the so-called rheumatic or chemical type. In one instance I found a general peritonitis dependent upon a facial erysipelas, transmitted possibly through the Fallopian tubes. An early exploration saved this patient.

There remains finally the class of movable tumors with long pedicles, in which the circulation is shut off by the revolution of the tumor about this pedicle. This accident is a not infrequent source of abdominal emergencies. It belongs to the category of the slowly fatal, the slowly infectious lesion, though occasionally fulminating. Hence the brilliancy of operative treatment. I have operated upon eight or ten of these cases with but one death. In many the diagnosis was wrong, the exploration being determined upon because of the urgency of the symptoms, rather than a clear recognition of their causes.

(To be continued.)

The Johns Hopkins Medical School. — It is stated in the *Medical Record* that the Johns Hopkins Medical School has opened with thirty five women in the school, six of whom are freshmen, with fourteen in the graduating class. In the first class that graduated there was one woman. Seven women in all have taken their degree from this school, and nearly every one now holds the position of resident physician in some well-known hospital in some part of the country.

THE TREATMENT OF CEREBRAL TUMORS.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

(Concluded from No. 15, p. 363.)

Bergmann has definitely committed himself to the opinion that it is not right to operate on a gumma; Horsley, on the other hand, says that the only way to treat a gumma is to remove it. Pathology and clinical experience teach us that even purely syphilitic processes in the brain are not always removed by antisyphilitic treatment, while the lesions secondary to such processes are of course unaffected. Antisyphilitic remedies may diminish the cell infiltration and thus relieve the symptoms; they do not affect the fibrous tissue of cicatricial character which helps to make up the gumma, although they may cause it to shrink, by lessening cell infiltration, so that it becomes a somewhat inert mass. This is well illustrated by a case at the Boston City Hospital for which I am indebted to Dr. C. F. Folsom. A woman entered with symptoms of a tumor in the Rolandic region and with a definite history of syphilis. After antisyphilitic treatment she left the hospital apparently well. In two or three weeks, after much indulgence in alcohol, she returned with her old symptoms, became comatose and died. A large gumma was found in the Rolandic region, which was clearly not a development of the last three weeks of her life. Treatment on her first admission had relieved the symptoms, but the gumma remained, to be roused to fresh activity later.

The statistics of the operative treatment of gummata, furthermore, are better than for any other form of growth. Out of 10 cases operated on, only one died, 2 improved but the growth recurred, 2 were improved and 5 recovered.

In former times Bergmann claimed that tubercular growths also were not to be operated on. I have elsewhere emphasized the well-known fact that so-called solitary tubercle is often associated with tubercular deposits in the meninges and that the growths are also more apt to be multiple than solitary. Theoretical considerations, however, must yield before the fact that one of Horsley's patients was well six years after the removal of a tubercular growth. The results of operation in other cases, too, will compare favorably with those of other growths, as the table will show; 3 recoveries and 4 improvements to 5 deaths in 14 cases.

In point of fact the growths which present the greatest dangers from the operative point of view are not gummata or tubercular growths, but the forms which have been more frequently operated on than any others, sarcoma and glioma. The infiltrating character so often seen in these growths makes their complete removal much more difficult and hazardous, (45 out of 52 partial removals were sarcoma or glioma), and the tendency to recurrence after supposed complete removal is also marked. If, therefore, we could be certain of the nature of a growth we should hesitate longer about operating on sarcoma and glioma than on tubercular growths or gumma. Horsley wisely advises early operation, if any be done, so as to attack the tumor before it has become large and

[1] Read before the Section of Neurology of the American Medical Association at Denver, June, 1898, and before the Surgical Section of the Suffolk District Medical Society, November 3, 1898.

TABLE XI.

ONE HUNDRED AND ELEVEN CASES WHERE A GROWTH WAS NOT FOUND (INCLUDED IN TABLE V).

Region operated on.	Recovered.	Improved.	Improved. Died later.	Not improved.	Not stated.	Died.	Tumor found.
Frontal.							
Previously collected, 2. Knapp. Op. cit.						2	
Armitage. Lancet, November 26, 1898		1					Second and third frontal.
Hahn and Ruhemann. Deutsch. med. Wochenschr., April 16, May 28, 1896			1				Pons.
Jaboulay. Arch. prov. de chirurg., i, 61, 1893				1			Left ventricle.
Springthorpe. Australasian Medical Journal, p. 518, 1893						1	Temporal.
Starr and Weir. Medical News, August 7, 1897						1	Temporal.
Central.							
Previously collected, 8. Knapp. Op. cit.			2			6	
Audeoud. Rev. méd. de la Suisse Rom., xiii, 753, 1893			1				Median aspect.
Brower and Bishop. Transactions of Chicago Pathological Society, i, 61						1	Median aspect.
Bruns. Op cit., p. 2.6			1				Deep-seated.
Cannit. Arch. Chir. de Bordeaux, September, 1895						1	Second frontal.
Clark. Glasgow Medical Journal, September, 1897						1	Superior parietal.
Cottet and Marly. Bull. de la Soc. Anat. de Paris, November, December, 1897						1	Paracentral lobule.
Courtney. Unpublished						1	Frontal base.
D'Alloceo Riforma medica, xiii, 4, 711, 1897			1				Thalamus.
Dearer and Lloyd. International Clinics, second series, iii, 119, 1892		1					
Dobson Lancet, i, 1,079, 1892						1	Multiple.
Faguet and Lowitz. Jour. de méd. de Bordeaux, April 21, 1895						1	Frontal.
Gessler and Bayha. Med. Corr. Blatt d. Würtem. ärst. Landesvereins, lxvii, No. 34, 1897			1				Temporal.
Gibson. Edinburgh Medical Journal, February, 1896						1	Corpus striatum.
Gordinier. Albany Medical Annals, September, 1898						1	Centrum ovale.
Gould. Transactions of the Clinical Society. London, xxxi, 286, 1898		1					
Gray. Brain, xv, 443			1				Subcortical.
Gray and Wyeth. Medical Record, February 7, 1891			1				Subcortical.
Hammond, W. A. Medical News, October 31, 1891	1						
Henschen. Pathologie des Gehirns, i, 156						1	Parietal.
Henschen. " iii, 229						1	Base.
Hermanides. Op. cit.				1			
Hirschl. Neur. Centralbl., xv, 609, 1896		1					
Hitzig. Therapeut. Wochenschr., Nos. 19, 20, 1896				1			
Hitzig. " "			1				Frontal.
Jaboulay. Arch. prov. de chirurg., i, 61, 1893						1	Chiasma.
Jaboulay. " " "						1	Centrum ovale.
Keen. American Journal of Medical Sciences, February, 1894				1			
Köster. Upsala Läkareforen. Förhandl. p. 321, 1896					1		
Kostar and Schiller. Ref. in Neur. Centralbl., xvi, 1,056, 1897			1				Multiple. Deep.
Liepmann. Monats. f. Psych., May, 1896		1					
Lloyd and Suckling. Birmingham Medical Review, February, 1889			1				Chiasma.
Poirier. Traité d'anatomie med.-chir., i, 65						1	Base.
Rémond and Baudy. Arch. prov. de chirurg., ii, 634, 1894						1	Base.
Rychlinski. Medycyna, Nos. 1, 2, 1897						1	Parietal.
Schlesinger. Wiener klin. Wochenschr., January 21, 1898			1				Entire hemisphere.
Schlesinger. Neurolog. Centralblatt, xiv, 702, 1895		1					
Sinkler. Transactions of the American Neurological Association, 1896						1	Frontal.
Stachow. Ueber einen operativ-behandelten Fall an Hirntumor						1	Frontal.
Starr. British Medical Journal, October 16, 1897						1	Basal ganglia.
Thomas and Hamilton. Journal of Experimental Medicine, ii, 635, 1897						1	Corpus callosum.
Twynam. Australasian Medical Gazette, p. 187, 1892						1	Parietal.
Vassal and LeFort. Bull. de la Soc. Anat., p. 30, 1891			1				Optic thalamus.
Walker. Medical and Surgical Reporter, ii, 213, 1890						1	Temporal.
Zeller. Neurol. Centralblatt, xv, 288, 1896			1				Corpus striatum.
Parietal.							
Previously collected, 1. Knapp. Op. cit.						1	
Borelius. Hygiea, lix, 539, 1897						1	Cerebellum.
Clarke. British Medical Journal, June 13, 1891						1	Optic thalamus.
Richardson and Walker. American Journal of Medical Sciences, December, 1893			1				Posterior parietal.
Saenger. Neurol. Centralbl., xiv, 472, 1895		1					
Wille. Allg. Wiener med. Zeitung, December 18, 1888			1				Paracentral.
Temporal.							
Previously collected, 1. Knapp. Op. cit.						1	
Fisher. Transactions of the American Neurological Association, 18'5			1				Cerebellum.
Lucas. Medical Press and Circular, January 4, 1893. (Trephined also in Rolandic region.)			1				Cerebellum.
New London or University College Hospital Report, p. 28, 1889			1				
Occipital.							
Previously collected						1	
Bruns. Neurol. Centralbl., xii, 386, 1893			1				Opposite occipital. Temporal.
Jaffé. Deutsch. med. Wochenschr., No. 5, 1897						1	Cerebellum.
Lambotte. Annales de la Soc. Belge de Chirurg., iv, 197, 1896						1	Angular gyrus.
Postempski. Atti del XI Congresso Med. Internaz., iv, 20		1					
Spencer. Therapeutic Gazette, March, 18'8	1						
Terrier. In Auvray. Op. cit.						1	Cerebellum.

TABLE XI.—(Continued).

Region operated on.	Recovered.	Improved.	Improved. Died later.	Not improved.	Not stated.	Died.	Tumor found.
Cerebellum.							
Previously collected, 2. Knapp. Op. cit.						2	
D'Allocco. Riforma medica, xiii, 4, 723, 1897						1	Optic thalamus.
Guthrie and Turner. Lancet, i, 527, 1895						1	Corpora quadrigemina.
Hermanides. Op. cit.						1	Frontal.
Hitzig. Therapeut. Wochenschr., Nos. 19, 20, 1896			1				Frontal.
Janz. Riforma medica, xiii, 4, 295, 1897						1	Cerebellum and optic thalamus.
Janz. " " "						1	Fourth ventricle.
Keen. American Journal of Medical Sciences, February, 1894						1	Third ventricle.
Knapp. Unpublished. (Parietal also trephined.)			1				Meningitis.
McBurney and Starr. American Journal of Medical Sciences, April, 1893.						1	Base.
Mills and Deaver. Transactions of the American Neurological Association, 1892				1			Cerebellum, pons, medulla.
Oppenheim. Die Geschwülste des Gehirns, p. 345			1				
Rehemann and Hahn. Deutsch. med. Wochenschr., Nos. 16, 22, 1896.					1		
Starr. British Medical Journal, October 16, 1897						1	Cerebellum.
Stewart. Pittsburgh Medical Review, November, 1892						1	Opposite cerebellar hemisphere.
Taylor. Transactions of the Ophthalmic Society, London, xiv, 105, 1894		1					
Region not stated.							
Bury. British Medical Journal, November 28, 1897			1				Optic thalamus.
Chipault. Gazette des Hôpitaux, lxxi, 857, 1898				1			Second frontal.
Chipault. " " "				1			Paracentral.
Chisholm. Australasian Medical Gazette						1	
Dinkler. Archiv f. Psych., xxix, 1,005				1			Centrum ovale.
Dudley. Brain, xi, 563, 1889			1				Frontal.
Foxwell and Marsh. British Medical Journal, i, 1,135, 1900				1			Centrum ovale.
Handford. British Medical Journal, March 16, 1895			1				Corpus striatum.
Inglis. Physician and Surgeon, Ann Arbor, xii, 114, 1890			1				Frontal.
Lucas. Championnière. Bull. et Mem. Soc. Chir., p. 426, 1891						1	Base.
Lucas. " " "						1	Frontal.
Macewen. British Medical Journal, ii, 1,267, 1893		1					Cerebellum.
Macewen. " " "			1				Cerebellum.
Park. Medical News, December 3, 1892						1	
Phillips. British Medical Journal, January 22, 1898	1						
Spencer and Keen. Therapeutic Gazette, March, 1898	1						
Taylor. Journal of Experimental Medicine, ii, 6						1	Optic thalamus.
Thomson and Stewart. Edinburgh Medical Journal, xxxix, 936, 1894						1	Optic thalamus.

has infiltrated into a considerable portion of the brain. In cysts, too, which may often be due to these growths, there is a strong probability that the cyst may refill unless its walls be excised — a proceeding always more difficult and dangerous and sometimes impossible.

The operations which have proved unsuccessful in finding the tumor have on the whole been attended with far less favorable results. Out of 111 cases where the tumor was not found, 4 are said to have recovered (!) and 10 to have been benefited; 29 improved for a time, and 58 died as a result of the operation. Ferrier's cases, in which the tumor was not removed, as I said, cannot be classed under the various headings which I have adopted of mistakes in diagnosis and palliative operations. In 15 cases of cerebral tumor in which the growth was not removed, 4 died as a result of the operation, 7 lived from one to ten months, one lived over a year, and in 3 cases the result is unknown. In 3 cases of cerebellar tumor in which the tumor was not removed, one lived from one to ten months and 2 lived over a year. The operation in his 18 cases proved directly fatal in 4, or 22 per cent. (Table XI).

The palliative operation is somewhat more promising, although thus far the roseate hopes of Chipault have not been realized (Table XII).

In 68 cases but 10 died from the operation and 35 were benefited, 15 others were benefited temporarily and 4 were not helped at all. Such cases, with the further evidence afforded by some cases where the operation was done ostensibly to remove a tumor but where the growth was not found or could not be removed, show that relief of the intracranial pressure by the removal of bone will often relieve headache. In part of the cases the headache is so distressing as to warrant the operation; in many cases, however, the headache is only moderate and it can be controlled by drugs. The operation, therefore, is of far less general application than Chipault claims. One other benefit from the mere removal of bone has been pointed out by Horsley and confirmed by a series of cases reported by Taylor,[26] namely, that by relief of pressure a progressive optic neuritis may improve and blindness may be prevented. I am not aware that any one has yet tried the simple incision of the sheath of the optic nerve to relieve neuritis, which Horsley suggests.

A word may be said as to the methods to be adopted to relieve pressure. Lumbar puncture has been tried in a number of cases and is a simple procedure which occasionally gives relief for some months. Usually, however, the effects are too transitory to be of much avail. If trephining be done should the dura be opened? Beevor claims that the dura will not stretch enough to give the necessary relief, but in one of the most successful cases of palliative trephining that I have seen the dura was not opened. If the dura be opened the dangers of cerebral hernia become greater and death may be hastened by the operation; yet it may be necessary to take these risks and to open the dura to get the necessary relief. Finally, if trephining alone be in-

[26] Trans. Ophthalm. Soc. Lond., xiv, 105, 1894.

adequate we may also puncture the ventricles. In other words, the operation should be progressive. It is now recognized that any trephining should be done in two stages, as Horsley advises; the first removing the button of bone, the second opening the dura and exploring the brain. By adopting this method in simple palliative trephining we have but to prolong the interval between these two stages a few weeks in order to see whether the second stage of opening the dura is necessary.

If we summarize the results of surgical interference in cases of cerebral tumor in the last fourteen years the outlook must be acknowledged to be discouraging. In about five-sixths of the cases of intolerable headache trephining will afford temporary relief, and, while sometimes hastening the end, will make the remaining period of life more endurable when drugs have failed to do so. In some cases of progressive amblyopia palliative trephining may also prevent blindness by checking the progress of the neuritis.

With regard to the more radical operation of removal of the tumor the chances of success are few and the outlook for the future is more hopeless. We do not seem to have gained much in diagnostic skill, although the gain in operative technique has diminished the mortality. Less than ten per cent. of all cases are amenable to surgical interference, and a mortality of nearly one-third renders the operation one to be undertaken only after grave deliberation. The chances of complete recovery after such an operation are very small, probably less than ten per cent. of the cases where the growth is wholly removed. The rest of the cases linger on, paralytic, epileptic or blind, and many finally succumb to a recurrence of the growth. It is a question whether the results of these operations are any more favorable than would be those obtained by medical treatment in the same number of cases, but statistics on this point are inadequate. Nevertheless, there is a small chance that an operation may effect a complete cure, or, at least, give relief for a number of months. With that chance, small though it be, an operation becomes justifiable, and the sooner it is done, if it is to be done, the greater the chances of permanent benefit. The constant increase in operative skill will probably continue to lessen the death-rate, and, although little has as yet been gained in diagnostic skill, there is still room for hope.

TABLE XII.

SIXTY-EIGHT PALLIATIVE OPERATIONS (INCLUDED IN TABLE V).

		Improved.	Improved. Died later.	Not improved.	Not stated.	Died.
	Previously collected, 7. Knapp. Op. cit.	6	1			
	Albert. Wiener med. Wochenschr., Nos. 1, 3, 5, 1895	2				
2	Albert. " "		1			
	Barlett and Van Lennep. Hahnemann Monthly, April, 1894	1				
2	Von Beck. Mittheil. aus d. Grenzgebiet. d. Med. u. Chir., i, 247, 1896.	1				
	Beevor and Ballance. British Medical Journal, i, 5, 1895	1				
	Broca and Maubrac. Archives gén. de Méd., February, 1896	1				1
	Brugelius and Berg. Hygiea, lvi, 529, 1894	4				
	Bruns. Neurolog. Centralbl., xii, 305, 1893		1			
	Bruns. Wiener med. Presse, 321, 1893	2		1		
	Carson. Annals of Surgery, xxviii, 328					1
	Caton and Paul. British Medical Journal, ii, 142, 1893	1				
	Chipault. Cong. français de chir., x, 283, 1896	3		1		
	Chipault. Gazette des Hôpitaux, lxxi, 567, 1898		2	1		1
	Chipault. L'Independance Méd., i-ii, 337, 1895-96	1	1			1
	Clarke and Morton. British Medical Journal, April 13, 1895	1				
	Cobb. British Medical Journal, October 6, 1888	1				
3	Courtney. Unpublished		1			
	Dercum. Transactions of American Neurological Association, 1896		1			
	Diller. American Journal of Medical Sciences, November, 1892					1
	Hektoen. Journal of American Medical Association, February 11, 1893					1
	Henschen. Pathologie des Gehirns, iii, 233, 1896		1			
2	Hern. British Medical Journal, ii, 1,045, 1893	1				
	Hoffmann. Verhandl. d. deutsch. Gesellsch. f. Chir., xviii, 67, 1889	1				
	Jaboulay. Arch. prov. de chir., i, 61, 1892					1
3	Kammerer. Annals of Surgery, i, 685, 1894			1		
	Keen. American Journal of Medical Sciences, February, 1894		1			
2	Keen. Medical News, September 20, 1890					1
2	Koeber. Corr. Blatt. f. schweiz. Ärzte, No. 17, 1889	1				
	Kocher. British Medical Journal, ii, 1,367, 1893				3	
3	Kramer. Cincinnati Lancet Clinic, xxxix, 523.	1				
	Park. Medical News, December 3, 1892	1				
	Patrick. International Clinics, 6th Series, iv, 157, 1897	1				
	Putnam. Boston Medical and Surgical Journal, i, 66, 1896	1				1
	Rohmer. Revue méd. de l'Est., xxx, 251, 1898	1				
	Sahli. British Medical Journal, ii, 1,267, 1893				1	
	Shattuck, Folsom and Bradford. Unpublished		1			
3	Stewart. Medical and Surgical Reporter, October 5, 1895	1				
	Stewart. Edinburgh Medical Journal, 935, 1894		2			
	Thorén. Hygiea, lvii, i, 544, 1895	1				
	Warnots. Cong. français de chir., vii, 1893					1
	Wyeth. Annals of Surgery, 685, 1895		2			

Clinical Department.

A CASE OF HEMORRHAGIC PLEURISY; PERMANENT DRAINAGE; RECOVERY.

BY GEORGE G. SEARS, M.D., BOSTON.

DURING the past year a singularly large proportion of the cases of acute pleurisy with effusion which have come under the observation of the writer have been of

the hemorrhagic type, but with two exceptions their clinical history differed in no respect from what is expected when the effusion is simply serous, the patients either recovering after one or two aspirations or failing gradually as the result of other processes with which the disease was associated. These two were exceptional, both in the large proportion of blood contained in the exudate and in their course. One is referred to in the title of this paper, the other is briefly reported from the marked contrast which it furnished in its termination.

Wm. C., thirty-seven years old, a cattleman on a transatlantic steamer, entered my service at the City Hospital on June 30, 1898. His family history was negative. He had always used alcohol to excess but his general health had been good. He had had several attacks of gonorrhea and a year ago had had a "chancre," but no secondary symptoms had been noticed. About the same time he sustained a fracture of the seventh and eighth ribs on the right side anteriorly. A week before entrance he had been kicked by a steer in the left side, but this had caused him very little inconvenience. On June 26th, while considerably under the influence of liquor, he went in swimming, and during his bath was suddenly attacked by severe pain in the right lower chest, which was followed by a short and distressing cough. He became much prostrated and sweat profusely.

Physical examination showed a well-nourished, powerfully-developed man, but anemic and suffering from marked dyspnea. The entire right chest was dull on percussion. Above the third rib the fremitus and voice sounds were increased and the respiration was bronchial; below that point they rapidly diminished and were soon lost. The left chest was negative. The heart's apex was in the sixth space, a good inch outside the nipple line. There were no murmurs. The lower edge of the liver extended about two fingers' breadth below the costal margin. Over the lower portion of the left chest the skin was somewhat discolored from a recent bruise, but no evidence of injury, either past or present, was discovered on the right side. On entrance, the temperature was 99.2°, pulse 130, respirations 40. During the six weeks in which he remained in the medical ward, the temperature ran a very irregular course within comparatively narrow limits, rarely exceeding 101°, and usually not going above 100°. The pulse varied between 100 and 120, and the respirations averaged about 35, never falling below 27, and on one occasion rising as high as 58. A blood count showed 2,944,000 red and 11,500 white corpuscles.

On July 6th the patient was aspirated and eight ounces of bright red fluid, macroscopically indistinguishable from pure blood, were removed. As he expressed himself as considerably relieved, it was repeated on the 9th, 11th, 13th, 14th and 17th, from twelve to twenty-five ounces being obtained each time without apparent decrease in the pleural contents. Symptoms of collapse almost invariably came on, which necessitated the withdrawal of the needle. During the week following the last aspiration he remained fairly comfortable, with but little variation in the physical signs, what change there was indicating a slight diminution in the pleural contents. On the 25th another attempt at aspiration was made which was only partially successful, but on the 28th the needle introduced below the inferior angle of the scapula drew off sixteen ounces. It apparently passed through a thick encapsulating wall. Thirty ounces more were withdrawn on August 7th. The fluid obtained during the later aspirations had grown progressively darker and showed less evidence of fresh blood. After consultation with Drs. Post and E. W. Dwight, he was transferred to the surgical side of the hospital and on August 11th the ninth rib was resected by the latter in the anterior axillary line and the pleura opened. Two pints or more of dark-red fluid escaped through the opening. Both the visceral and parietal layers of the pleura above the incision were lined by a light, white feathery coating about three-quarters of an inch thick, apparently a white clot. Below, the membrane was denser and of a spongy consistency. The cavity was washed out and a rubber drainage-tube inserted.

On August 15th it was noted that the discharge was considerable, hemorrhagic in character, containing a small amount of pus and of a somewhat offensive odor, but from the time of the operation he steadily improved, except for a slight set-back occasioned by an operation for the recovery of a drainage-tube which had slipped its moorings and became lost in the pleural cavity. A bit of the membrane was sent to Dr. Pearce for examination, who reported as follows: "A small, irregular, yellow, blood-stained mass consisting of dense fibrous tissue, with lymphoid and plasma cells. No blood-vessels. Many polynuclear leucocytes near surface. No evidence of tuberculosis or malignancy."

During the remaining weeks of his stay in the hospital he gained in color, weight and strength, but when he left, at his own request, on September 22d, a small sinus still remained, from which a very slight discharge still issued. The temperature had been normal for over two weeks. Soon after he left for the West and has been lost sight of.

A somewhat hasty search through the literature of the subject failed to discover more than two cases where a permanent opening was made for pleural effusions other than purulent. Both are reported by West, and in both the exudate was serous. Both were cases of long standing in whom repeated aspirations had failed to cure. Both recovered, although in one a long sinus still persisted at the time of the report, yet the patient was able to resume his regular work. The reason given by West — failure to improve after many months' treatment by aspiration — as having induced him to advise so radical a measure was only partially applicable to this case. Repeated aspirations had produced but little change in the physical signs during the seven weeks in which he was under observation, and the withdrawal of thirty ounces of fluid on August 7th, and the escape of a quart or more four days later when permanent drainage was established, showed that in spite of them a very considerable quantity still remained, but of more importance was the fact that under conservative treatment the patient was not doing well, apart from the behavior of the fluid; he remained greatly prostated, the anemia was very marked, and the temperature still ran a decidedly irregular course.

Other considerations which induced us to resort to radical measures were:

(1) The protracted course of the disease, in which an active inflammatory process was shown by the large amount of blood, which made it probable that if recovery took place the lung would remain tied up and unable to expand. This probability was strengthened

by the discovery, by the aspirating needle, of the thick layer of fibrin covering the pleura, whose presence was positively demonstrated at the operation and which would have acted as a further barrier to complete pulmonary expansion.

(2) The probable etiology. The suspicion, which is justified in a large majority of cases of pleurisy, that the tubercle bacillus was the active agent was increased by the markedly bloody character of the exudate, as well as by the fact that it remained persistently sterile until four days after the operation, when a few diplococci, probably the pneumococci, were found on culture. Positive proof, however, was not obtained. Repeated examinations of the sputum were always negative and no evidence of tubercular changes in the lungs on careful examination either before or after operation was ever found. If tuberculosis were present, which in spite of all the negative evidence seems probable, it still remained practically a local one, and the curative effects of drainage of other serous cavities, similarly affected, encouraged one to hope that good might result here, while, if it were not present, the risk was no greater than in an operation for empyema and was worth taking for the additional lung capacity which it would give, leaving other considerations out of the question.

The second case was seen on March 11, 1899, in consultation with Dr. G. A. Bancroft, of Natick. The patient was a man about forty years old, who for several months had had a short hacking cough, and had lost somewhat in strength and flesh. About ten days previously he began to complain of pain in the left chest, of increased cough and dyspnea. Nausea and vomiting were also very prominent symptoms. In the course of a few days he became very much blanched. The temperature had run an irregular course but was never very high, rarely going much above 101°.

Physical examination showed that the left chest was filled with fluid, the heart being dislocated so that its right border was in the right mamillary line. The right chest was otherwise negative. A needle was introduced and over a pint of fluid resembling pure blood withdrawn.

He was more comfortable during the following few days, and when seen by Dr. Bancroft on the afternoon of March 1st appeared in fairly good condition, with a temperature of 100°, pulse 90, respirations 24. Early the next morning, however, he sat up in bed, complained of feeling very badly and fell back dead. No autopsy was obtained. From his history and general appearance the case was undoubtedly tubercular.

GASTRIC ULCER AT THE MASSACHUSETTS GENERAL HOSPITAL, 1888-1898.[1]

BY ROBERT B. GREENOUGH, M.D., AND ELLIOTT P. JOSLIN, M.D., BOSTON.

The writers undertook the study of all the cases of gastric ulcer which entered the Massachusetts General Hospital in the ten years 1888–1898, with the hope of affording statistical evidence to the effect that a lasting cure was not obtained by medical treatment in a large proportion of cases. This study was materially aided by suggestions from Dr. J. C. Warren and Dr. R. H. Fitz, through whose assistance access to the hospital records and permission to report the cases was obtained.

Frequency. — Out of 13,097 cases, the total number of medical cases entering the hospital in the ten years 1888–1898, there were 187 cases of gastric ulcer, a percentage of 1.4 per cent. This percentage is somewhat higher than obtains in Baltimore (Cushing), Chicago (Capps), or Denver (Warren).

Sex. — One hundred and fifty-seven cases were in females and 30 in males, a proportion of five to one. Other statistics vary in this regard, but the proportion quoted by Fiedler,[2] based upon autopsy reports, of 14 to one, alone surpasses the large preponderance of females in the Massachusetts cases. No satisfactory association between the gastric ulcer symptoms and menstrual disorders could be determined.

Age. — The two extremes of age were eight and sixty-seven years. Between these limits, by far the larger proportion of the patients (75 per cent.) were between twenty and forty years of age, this being quite in accordance with other observations. The male cases averaged thirty-six and three-fourths years, and the females nearly ten years younger, twenty-seven and one-tenth years, and 113 of the females were under thirty years of age. Thus women are more susceptible to the disease at a period nearly ten years younger than are men.

Occupation. — Servant girls and cooks made up a large proportion of the female cases, 73 per cent. This is in accord with other statistics, and an etiological significance has been attributed to these occupations. But in fact these classes of society are represented in no larger proportion than in all the female medical cases admitted to the hospital, since they formed 75 per cent. of 216 consecutive admissions taken at random from the record. No weight can therefore be laid upon the occupation in this series of cases.

Symptoms. — The frequency of the chief symptoms in 187 cases was as follows:

	Cases.	Per cent.
Vomiting	179	95.7
Pain	173	92.5
Vomiting of blood	147	78.6
Pallor	131	70.1
Tenderness	130	69.5
Constipation	123	65.8

Vomiting. — The most frequent and practically universal symptom was vomiting, being recorded as absent in only four cases and doubtful in four more. The amount and the time of vomiting were subject to great variation, not only in different individuals but also in the same individual at different times. The statements of Ewald, Boas, Leube and others are at variance also in these particulars, and the hospital records are of no help in deciding the question. In general, however, the vomiting was recorded by the patient as following the ingestion of food, and at the height of the pain.

Pain. — Pain was felt in the epigastrium in 142 out of the 173 cases in which this symptom was noted, but in only 91 of this number was the pain confined to this region alone. Pain in the back was recorded in 41 cases, but only once was it referred alone to this locality. In only six cases was the pain felt to the right of the median line, but in 13 cases it was situated in the shoulders. One hundred and two patients gave the time of occurrence of the pain as following the ingestion of food, and were generally

[1] Read in part before the Boston Society for Medical Improvement, April 10, 1899.

[2] Cited by Ewald: Krank. des Magens, p. 383.

relieved by vomiting, though in 18 the pain was continuous. In 19 cases there was no relation to the time of taking food, and in 14 cases there was no pain at all. Of these last 14 cases without pain, seven were cases of sudden onset, with severe hemorrhage, which in three instances was fatal, and they suggest a grave type of the disease.

Hemorrhage. — Hemorrhage from the stomach is considered by Osler, Hemmeter, Leube and others, to be present in about 50 per cent. of cases of gastric ulcer. Of 182 Massachusetts General Hospital cases, however, blood was noted in the vomited material in 147 cases, a percentage of 81 per cent. In only 86 cases, or 45 per cent. was the loss of blood productive of constitutional symptoms, and it is possible that outpatient cases of a less severe type were made to figure in the statistics of other writers. Hemorrhage was the first symptom in 19 cases, 15 women and four men, but as a rule symptoms were present before erosion of any large-sized vessel occurred. Seven cases, or 3.7 per cent. of the total number, died of hemorrhage, in three of these cases the hemorrhage being the first symptom. As regards sex the fatality is striking, as only two out of 157 females (1.2 per cent.), died from this cause, against five out of 30 males (17 per cent.). The average age of the five males was forty-eight years, and of the two females forty-two and five-tenths years, a marked freedom from fatal cases from this cause being noticed in the younger cases. Hood[3] says that death from hemorrhage in gastric ulcer seldom or never occurs in young females. In five of the seven fatal hemorrhage cases the bleeding was slight and frequently repeated, and in only two cases did death occur shortly after the hemorrhage, and then only in six and in nine days respectively. Blood was thought to be present in the stools in 55 cases, but observations are liable to error in this regard.

Pallor. — Pallor was observed in 131 of the 164 cases in which a record of the color was made. Of 73 cases where the hemoglobin was estimated, 34 were below 50 per cent. and 64 below 80 per cent. Thus a notable degree of anemia was present in about 80 per cent. of all the cases. In 43 cases the red corpuscles were counted and in only 24 of these were they below 4,000,000, thus suggesting a greater diminution of hemoglobin than of corpuscles, a condition expressed by the color index, which averaged 0.67 per cent. This bears out the observations of others that an anemia of the chlorotic type is the rule in gastric ulcer.

Tenderness. — No evidence of tenderness to palpation could be discovered in 51 of the 187 cases, but in 130 this sign was present to a greater or less extent. Only slight weight can be laid upon this condition on account of the personal variation in its determination.

Constipation. — This condition was present in 123 cases.

Perforation. — Perforation occurred in six cases (3.2 per cent.). Five were females (3.2 per cent. of all female cases), and one male (3.3 per cent. of all male cases). The ages ranged from eighteen to fifty-seven years. No perforation occurred without previous symptoms, and the symptoms were generally striking. All six cases died, one only surviving the perforation, and dying seventy days later of nephritis. In two cases general peritonitis was the cause of death, and in two a local abscess; the situation of the ulcer apparently having less to do in determining the result than the mobility of the stomach and its freedom from adhesions. Only one case suffered perforation while on starvation diet and this one alone survived, to die later of nephritis. One case was operated upon six hours after the perforation, but did not survive.

[3] Hood: Medical Society's Transactions, London, vol. xv, p. 283.

Results. — Statistics vary widely in the per cent. of cures in cases of gastric ulcer, and authorities may be found for figures from 50 to 85 per cent. The mortality is estimated by Leube at two per cent. Reports were obtained from 114 out of the 187 cases of ulcer occurring in the decade, and these figures may be taken to represent, therefore, the end results of treatment at an average of five years after entering the hospital.

At the time of discharge from hospital of these 187 cases,

121 were considered cured	64 per cent.
34 relieved	18 "
15 died	8 "
17 were otherwise classified	9 "

Of the 114 cases in which end results were known:

	Discharged.		Average five years later.		
	Cases.	Per cent.	Recur.	Dead.	Cured.
Cured	63	55	28	8	27 = 43
Relieved	29	25	10	4	15 = 29
Dead	15	13			
Otherwise	7	6	3	3	1 = 7
			41	15	43 99

Fifteen cases died after leaving the hospital and the cause of death was known to be gastric in eight, non-gastric in three and doubtful in four. Thus of 114 gastric ulcer patients, at an average period of five years after leaving the hospital, there were

46 cured	40 per cent.
41 with recurrence	36 "
23 deaths (cause gastric)	20 "
4 deaths (cause doubtful)	4 "
114	

That is, 60 per cent. failed to derive a lasting cure from medical treatment.

The large percentage of mortality in the hospital (eight per cent.) is striking in comparison with Leube's mortality, and can be explained only by the more severe type of the disease met with in these cases, as evidenced by the greater percentage of hemorrhages. More striking still, however, is the fact that, while 80 per cent. were considered cured or relieved at the time of discharge from hospital, only 40 per cent. of those whose later condition could be ascertained derived a complete and permanent relief.

Treatment. — Starvation diet and rectal feeding were the therapeutic measures adopted in the more severe cases, and a milk diet was given, as a rule, in the milder ones, so that a comparison of the two forms of treatment can hardly be made with justice. It may be said, however, that while on one service the rectal feeding was more popular, and on the other the milk diet was the rule, the percentages of recovery on the two services were the same.

CONCLUSIONS.

(1) Gastric ulcer is more frequent in Boston than in Chicago, Baltimore or Denver.

(2) It is five times as common in women as in men.

(3) The average age in men is thirty-seven years; in women twenty-seven.

(4) Hemorrhage was present in 81 per cent. of the cases. It caused the death of 17 per cent. of the

male patients, but only 1.27 per cent. of the females. No woman under thirty died of hemorrhage from gastric ulcer during this period.

(5) The blood was that of a chlorotic type of anemia.

(6) Perforation occurred in 3.2 per cent. of the cases, and none of these patients left the hospital alive.

(7) Of 114 patients 80 per cent. were discharged cured or relieved, but at the end of an average period of five years only 40 per cent. remained well. The mortality at the same time (due to gastric disease) was 20 per cent. Among the males it was 30 per cent.; with the females nine per cent.

(8) The excessive mortality of ulcer among men, its occurrence in life a decade later than in women, and the absence of fatal cases of hemorrhage in females, point to a difference of the ulcer in the two sexes.

(9) The mortality of eight per cent. and the failure of medical treatment to effect a lasting cure in 60 per cent. of the patients, indicates the need of surgical intervention in other than emergency cases of this disease.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WM. DUDLEY HALL, M.D., BOSTON.

RETROBULBAR OPTIC NEURITIS.

E. Nettleship's[1] conclusions are based upon observations of 148 cases, and he is inclined to consider a pathological division into idiopathic and symptomatic to be correct, although on clinical grounds, with our present knowledge, it may be impossible to definitely place a given case under either subdivision. In the idiopathic variety the lesion is located in the nerve, between the eye and the brain, and while usually but one nerve is affected the other may be after a sufficient interval of time has elapsed. The vision fails rapidly, the climax being reached in from one to five days, and varies from a slight central haze to total loss of perception, but bears no relation to the fundus changes. Recovery of vision is possible if not too long delayed. The centre of the field of vision is always invaded; the direct pupil reflex is lowered and pain is a very common symptom, which latter, when subjective, is behind the eye and to the temporal side. Pressure on the globe or movement of the same also gives rise to painful sensations. There is no vomiting, nor are there any external signs of inflammation. The fundus changes are slight, being merely a slight haziness of the disk. Engorgement of the vessels or hemorrhages are wanting. When the onset is very rapid and of high degree it is sometimes difficult to distinguish this condition from embolus or a hemorrhage into the sheath. The condition of the field, the behavior of the pupil, the mode of onset and the fact that there is no improvement by suggestion, will serve to distinguish it from hysterical amblyopia. In 88 cases the author finds that the proportion is two to one, the female being the more apt to be affected; three-fourths of the patients were between twenty and forty. Exposure to cold, mental depression, worry, gout, influenza, typhoid and malaria are given as causes. In a considerable number of these cases there was noticed a marked predisposition to functional disturbance or organic disease of the nervous system; in fact, it seems highly probable that while double optic atrophy, with a well-known train of symptoms, causes one to suspect tabes, an attack of acute retrobulbar optic neuritis, usually single, but if double, with delayed symmetry and generally ending in partial or complete recovery, should cause some anxiety as to the possible onset of disseminated sclerosis. The rapid onset points either to inflammation or to a slight infiltrating hemorrhage from the minute vessels of the nerve; the character of the pain locates the disturbance in the orbital part of the nerve and the almost constant involvement of the central or paracentral part of the field indicates disease of those nerve fibres coming from the yellow spot region, which, near the eye, lie on its temporal side, but in the axis further back.

[1] Royal London Ophth. Hosp. Reports, May, 1899.

OCULAR MANIFESTATIONS OF LEPROSY.

Jeanselme and Morax,[2] in an article founded upon 11 cases, draw the following conclusions:

Ocular manifestations are very common. The upper lids rarely escape when skin of other parts is affected and lesions of the globe are bound to be met with sooner or later. Maculæ and tubercles may disappear without leaving a trace, or there may be atrophic lesions of skin and loss of hair, but ulceration is rare. Conjunctival lesions are rare and always secondary to subjacent scleral lesions; thus infection of the deeper parts does not take place from without, as is generally supposed. The space between the insertion of the recti muscles and the cornea is the seat of election for primary lesions, and while here the symptoms are slight. There are two varieties of corneal lesion, one resembling a circumscribed leucosarcoma and the other an interstitial keratitis. As to the iris, there may be a plastic iritis, not at all distinctive, or a marginal growth resembling a gumma or a deposit of very fine grayish dots requiring a lens to bring them out. The ciliary body, anterior part of the choroid and retina are frequently involved although descemetitis is not common. The entire posterior part of the globe commonly escapes. The abundance of the "Hensen" bacillus proves its importance in the pathology of the disease and by analogy, pending the discovery of the syphilitic microbe, it may be argued that interstitial keratitis is an essential part of tuberculosis and syphilis. Although these three diseases may resemble one another under the microscope, their course and associations are widely different, therefore let interstitial keratitis be considered as a symptom common to these and possibly to other diseases. The authors thus describe leprous keratitis. Near the corneal margin, often at a point corresponding to pre-existing lesions in the sclera, a slight haze appears without any interference with the corneal reflex, which a magnifying glass resolves into a number of minute opacities, nodular and more or less confluent and situated principally between the superficial layers of the cornea or just in front of Descemet's membrane. Near the margin, the infiltration is denser, like an arcus senilis, but smaller in extent and reaching right up to the corneal margin. When confined to one sector of the cornea it may clear up completely, but it generally recurs. When the whole cornea is involved

[2] Annal. d'Oculistique, December, 1898.

no return to complete transparency is possible. Secondary glaucoma is not at all uncommon.

EXTRACT OF THE SUPRARENAL CAPSULE IN DISEASES OF THE EYE.

Bates,[2] while experimenting to determine the therapeutic effect of some of the ductless glands, noticed certain properties of the aqueous extract of the suprarenal capsule, which extensive use in both this country and Europe has abundantly confirmed. In a recent paper he gives the following as the result of his observations.

It is a powerful astringent, the conjunctiva of the globe and lids rapidly becoming white after its use, repeated use or increased strength causing greater effect. The cause of the redness has no effect on the result. This effect is only temporary, lasting perhaps one-half hour; it is non-irritating. It has no direct effect upon the nervous system. The pupil is not affected, neither is the accommodation. It is not an anesthetic, the relief of pain being due to the reduction of congestion. A tolerance is never acquired, neither is there any secondary effect of increased congestion or pain noticed. There is no desquamation of the corneal epithelium noticed. In preparation, five grains of the dried and pulverized gland of the sheep are mixed with one drachm of water, allowed to stand five minutes and then filtered, which filtrate contains about one per cent. of the extract; a 33-per-cent. solution may be obtained. It cannot be mixed with antiseptics, is light brown in color and should whiten the caruncle in one minute. The extract is soluble in water but not so in alcohol, chloroform or ether. It increases the tone of all muscular tissue by direct action. Bates has used the extract in a variety of cases, but his results seem to show that the extract is not curative but rather by its astringent action has promoted absorption of other remedies.

THE INTRODUCTION OF IODOFORM INTO THE ANTERIOR CHAMBER OF THE EYE IN TUBERCULAR IRITIS.

Weill[4] states that tuberculous material taken from the human iris and ciliary body was introduced into the anterior chamber of two rabbits. After the tuberculous nodules appeared upon the iris of the rabbits, iodoform, sterilized and then freed from carbolic acid, was introduced into the anterior chamber. From the clinical appearances and histological examination are the following conclusions drawn: Sterilized iodoform is slowly taken up from the anterior chamber even if the boundaries of the latter are diseased. It undoubtedly exercises a mitigating influence not only in an eye in which tuberculous material is simultaneously introduced, but also in those eyeballs in which the iris had been previously tuberculous. It is probable that the tuberculous process in the bulbi already tuberculous would have been less intense if the inoculation could have been made more thorough and kept free from deleterious complications. Iodoform inoculation may bring about at least a temporary retardation of the tubercular invasion, and afford sufficient time to build up the general system enough to resist the invading bacillus. It is not incompatible with other remedies, but on the contrary needs them as adjuncts. It is applicable in acute as well as chronic cases.

[2] Archives of Ophthalmology, May, 1899.
[4] Loc. cit., vol. xxviii, 2.

AIROL IN HYPOPION KERATITIS.

Bonivento[5] has treated 40 cases, usually with success. Airol is harmless, non-poisonous, odorless and not irritating. When it is dusted upon the eye it lessens the injection, does not injure the cornea and in general does not produce pain. When purulent conjunctivitis and dacryocystitis are complications these conditions are greatly benefited. Airol appears as a fine powder, grayish black in color and slightly aromatic. It contains bismuth, gallic acid and iodine, which latter is broken up when it comes in contact with the tissues. After long use there is no eczema, as in the use of iodoform. Zirm[6] for a long time used iodoform in treatment of this condition, and later on was induced to try airol, which he thinks prevents invasion of bacteria by the formation of a thin coating upon the cornea, as well as having a curative effect. He finds it to be irritating and consequently turned to xeroform with the happiest results. When there is a coexistent dacryocystitis he injects an emulsion of xeroform into the lachrymal sac.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

The regular meeting was held April 10, 1899.

Drs. Robert B. Greenough and Elliott P. Joslin gave a *résumé* of a report of 187 cases of

GASTRIC ULCER TREATED AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1888 TO 1898.[1]

Dr. Warren: I think this paper is a most timely and interesting one. It furnishes a great many valuable facts which we are in need of at the present time.

The point that seems to be brought out by their paper is that the sequelæ of gastric ulcer are much graver than we have been led to suppose. The old statement that a very large percentage of cures obtained by medical treatment will have to be, in the light of these figures, revised. Another point that is interesting is the fact that it is not simply hemorrhage alone or perforation alone that is to be feared in this disease as a serious complication or sequel, but it has been found that a great many cases of cancer have developed after a previous history of ulcer of the stomach. Then we have the very distressing and sometimes very serious complications of stricture within at the pylorus, and, finally, adhesions forming outside following perigastritis, giving rise often to very painful symptoms indeed. So that gastric ulcer, although it often is cured medically and perhaps gets well of itself in a certain number of cases, is a disease which needs our careful study and the careful study not only of the physician, but of the surgeon as well, and I think that within the last few years the surgeons are turning their attention very seriously in this direc-

[1] See page 389 of the Journal.

[5] Klin. therap. Wochenschr., 1898.
[6] Wien. klin. Wochenschr., November, 1898.

tion. A great deal of new and interesting literature is being produced in consequence.

In regard to the surgical side of it Dr. Richardson has shown you in his paper what can be done. You will also observe during the period of ten years which was included in the statistics of Dr. Greenough and Dr. Joslin there was no case of perforation that survived in the Massachusetts Hospital, so that that complication was an extremely fatal one, and it is of interest of course to us all to hear the report of any case that has been a successful one and also to hear of all the cases, successful or unsuccessful, so that we may study the conditions which may enable us to achieve success in the future. Successful operations for perforation are now not so rare as they were. A number have been reported. They certainly are a great emergency in abdominal surgery and require very early diagnosis and very prompt interference. I had two cases this winter at the Massachusetts Hospital of perforation from gastric ulcer. In the first I made the diagnosis and the patient died after an operation. In the second I did not make the diagnosis and the patient recovered after an operation. In the first case perforation did not come on suddenly, as is often the case in these complications. It seemed to have been preceded by a considerable amount of perigastric inflammation, that is, there must have been a considerable amount of protective peritonitis developed around the ulcer as it was eating its way through the stomach. The patient came into the hospital having the symptoms of a peritonitis in the neighborhood of the pylorus or gall-bladder — you might say in the right upper quadrant of the abdomen. He came in as I was going away one afternoon and I advised noninterference that day. The next morning the patient was decidedly worse, and after seeing him in consultation with Dr. Fitz, I advised an immediate operation performed. It was on the second day, apparently, of the perforation, and then it seemed clear to me that it was perforation of the stomach. As the patient wished to make many preparations for the operation, it was not until late in the afternoon that I was allowed to operate. When the abdomen was opened there was a large perforation, the peritoneum was full of gas and green vomitus, and he did not survive the operation through the night.

In the second case the patient was operated upon as soon as I saw him, but not until about twelve hours after the perforation had taken place. He was brought to the hospital in the evening late, and Dr. Shattuck saw him at his visit in the morning and advised immediate operation, and thought as I did, that on the chances it was appendicitis. The patient was a young man about twenty-one, and there was not a very clear history of gastric ulcer, if I recollect rightly, in this case. Operation was performed, a small perforation not far from the pylorus found, suturing quickly done, the abdomen very thoroughly washed out with several gallons of salt solution, and the patient made an uninterrupted recovery.

The subject is such a large one it is difficult to go into the question of the treatment of hemorrhage and precisely what the indications for interfering are. Writers generally seem to think that it is not the cases of profuse sudden hemorrhage who ought to be the subjects of interference, but rather the slow, repeated ones which are gradually sapping the vitality of the patient, and then there comes the question what to do in case of hemorrhage. In some of these cases no distinct ulceration is found, the stomach is in a state of congestion, with ecchymotic points. In such a case it seems difficult to know exactly what to do. The advice has been given to tie some of the arteries of the greater or lesser curvature of the stomach — a very simple operation and one which might possibly make a decided difference in the amount of hemorrhage. Physiological rest of the diseased part is always indicated. The operation of gastro-enterostomy has found great favor and with some surgeons it is almost considered a panacea. One French surgeon performs gastro-enterostomy for almost every affection of the stomach. In this manner the food is sidetracked from the pyloric end, and if we assume that the pyloric end of the stomach is not in such intimate connection with the body of the stomach as has been shown in Dr. Bowditch's laboratory, we can readily see how anastomosis would shut it off pretty effectually and in that way an opportunity given for the ulcer to heal. The operation for gastrolysis is an extremely simple operation and it is one which makes one feel like making an exploratory operation where symptoms of pain in the region of the pylorus persist even after treatment. The exploratory incision sometimes reveals trivial adhesions in the neighborhood of the pyloric end of the stomach and gall-bladder, and the division of these gives complete relief.

Dr. Farrar Cobb: A year ago I read a paper before this Society on the operative treatment of general peritonitis. I then took occasion to collect all the reported cases of operation for perforating gastric ulcer and, as I remember those figures, I found 144 cases. The mortality of the operation was 41.5 per cent. A very interesting part of the figures, as I remember them, was that only 44 cases of perforating gastric ulcer had been operated on up to 1895 and 34 died. The 100 additional cases had all been operated on between 1895 and the spring of 1898, and the percentage of recovery was very much greater. Of the cases operated on within twelve hours after perforation 78 per cent. recovered.

Dr. Morse: I have been very much interested in Drs. Joslin and Greenough's paper. My impression is, however, that gastric ulcer is more common in Boston than their paper shows. I should say that my clinic presented a considerably larger proportion of cases of gastric ulcer. It also seems to me that a larger proportion of the cases are in women than their figures seem to show. I have found, as they have, that tenderness is a rather unimportant symptom. I have seen but two cases of perforation from gastric ulcer. One in Dr. Mason's service, which was brought to the hospital later, was operated on by Dr. Munro and died. The other I saw two months ago — a baby seven weeks old, breast fed, when six weeks old began to have pain and distention of the abdomen, with vomiting and diarrhea. The symptoms grew steadily worse and the baby was brought to the Out-patient Department of the Infants' Hospital. Dr. Dane and I saw the baby together and made up our minds that there was a general peritonitis, and that the only possible chance for the baby lay in an operation. The abdomen was greatly distended, and as soon as it was opened almost all of the intestines came out. The peritoneum was all markedly injected, but did not contain any fluid or any gastric contents. The intestines were punctured and gas let out; they were then care-

fully examined, but no cause for the general peritonitis was found. The abdomen was flushed out with salt solution and gauze drainage left in. The baby died in about three days.

At the autopsy Dr. Whitney found a round ulcer of the stomach on the posterior wall near the pylorus, with a pin-hole perforation which had evidently allowed the germs to get into the cavity without allowing the food to pass. I think this must be nearly the youngest case on record.

Dr. Burnside Foster, of St. Paul: I do not know that I have anything to add. I am very glad to have an opportunity of expressing my appreciation for the privilege of listening to this paper and discussion. I am not in the habit in my own practice of seeing very much of gastric ulcers, although incidentally I have seen five cases operated in the practice of other surgeons, two of which recovered. There came to my mind as I listened to this discussion a rather interesting experience in regard to this subject, showing the difficulties of diagnosis. A few weeks ago I happened to be in Baltimore, and at the Johns Hopkins Hospital I had the opportunity of seeing Professor Welch perform an autopsy. The case was one upon which no positive diagnosis has been made. The man had been a hard drinker, in the hospital many times, with a cirrhotic liver, and died apparently from intestinal hemorrhage; no suspicion of any trouble with the stomach. Finally, Dr. Welch, in the course of his remarks, was endeavoring to explain the tendencies of the hemorrhage which had taken place, when suddenly he found a considerable ulcer of the stomach which had not been suspected, as there had been no clinical symptoms relating to the stomach, although the man had been an habitué of the hospital for some time. That occurred to me as an instance of the fact that gastric ulcer is very often almost devoid of symptoms referable to the seat of the disease.

AMERICAN PEDIATRIC SOCIETY.

(Concluded from No. 15, p. 369.)

The Eleventh Annual Meeting of the American Pediatric Society was held at Deer Park, Md., June 27, 28 and 29, 1899.

SECOND DAY.

Dr. J. P. Crozer Griffith, of Philadelphia, reported a case of

TRANSPOSITION OF THE VISCERA AND OF THE GREAT VESSELS; WITH PHOTOGRAPH.

The patient, a boy, eight months old, began three months previous to admission in the hospital to have attacks of cyanosis and dyspnea lasting about twenty minutes and occurring half a dozen times a day. He became blue in the hands, feet and face, and had rapid breathing. On admission the child seemed ill and was distinctly cyanotic. A systolic murmur was heard with greatest intensity at the pulmonary cartilage and at the third left interspace close to the sternum, as well as at the aortic cartilage and apex. It was not transmitted to the axilla and there was no thrill.

The diagnosis was made of pulmonary stenosis probably associated with perforate septum ventriculorum. The child soon sickened with what appeared to be symptoms of pneumonia, cyanosis increased and he was so weak that he was treated purely symptomatically and the actual condition of the viscera was not investigated.

Dr. Griffith exhibited the post-mortem specimens showing the following peculiarities: The aorta arises from the right ventricle, and passing upwards arches slightly from left to right, then almost directly backward over the right bronchus and descends upon the right half of the vertebral column; the coronary arteries arise from the right ventricle; the pulmonary artery from the left ventricle, to the left of, and slightly posterior to, the origin of the aorta. The liver lies chiefly to the left side and the spleen lies in the mid-axillary line in the right hypochondrium; there are two supernumerary spleens.

Dr. Chapin said that he had presented a case to the New York Academy of Medicine some years ago where the heart was on the right side and the liver on the left, but his patient was in perfect health and the transposition of the viscera was accidentally discovered.

Dr. Koplik had reported a similar case in which the patient was in good health, except for occasional attacks of asthma.

Dr. Northrup said that some years ago he had seen a case of symmetrical transposition of all the viscera in an adult female. Since that time he had made over 2,000 autopsies without discovering a case of transposition in the infant.

Dr. Griffith remarked that this was the fifth case he had seen.

Dr. R. G. Freeman, of New York, made

OBSERVATIONS ON CERTAIN ABNORMAL CONDITIONS IN LIVERS OF INFANTS AND CHILDREN.

Dr. Freeman has carefully studied the autopsy reports at the New York Foundling Hospital with special reference to the condition of the liver. These consisted of some 500 cases, and he finds that cirrhosis of the liver is very rare in infancy, as is also the condition of waxy liver. A careful study of fatty livers is made, and in contradistinction to the ordinary statements given in most text-books, he formulates the following conclusions: (1) Fatty livers occur very frequently in the infants and children that come to autopsy at the Foundling Hospital — in about 41 per cent. of all cases; (2) the condition of nutrition of the child apparently has no connection with the fatty condition of the liver, the condition of nourishment in the cases having fatty livers averaging about the same as in the whole number of cases; (3) fatty livers occur rarely in the chronic wasting diseases, such as marasmus, malnutrition, or rhachitis and syphilis, unless such condition be complicated by an acute disease; (4) with tuberculosis fatty livers occur not more often than with other conditions; (5) fatty livers occur most often with acute meningitis, gastro-intestinal disorders, measles and diphtheria.

Dr. A. H. Wentworth, of Boston, reported a case of

MENINGITIS DUE TO THE TYPHOID BACILLUS.

The patient, four years of age, was seen October 1, 1898. Had always been a delicate child, but had never had any previous illness. For six days prior to entrance in the hospital had been feverish, drowsy, without appetite, and was said to have been delirious at times. On entrance in the hospital there was con-

siderable apathy, from which she could be aroused without difficulty, although she became quite irritable. The urine contained a faint trace of albumin; its specific gravity 1.015. The examination of the blood showed 12,000 leucocytes to the centimetre. A provisional diagnosis of typhoid fever was made. The next day the night nurse reported that twice during the night the child's body became rigid, the hands clenched and the eyes were rolled upwards; this condition lasting about one minute each time. An examination of the eyes was made without result and no growth was obtained from fluid secured by spinal puncture. On the following day the child was somewhat improved and an examination of the ears showed a bulging of the right tympanic membrane, and on paracentesis an escape of air but no fluid. Widal's test was negative, though the clinical symptoms were those of a moderately severe typhoid fever.

On October 15th a second blood count showed 9,600 leucocytes. On the 16th the child became very stupid and by evening was unconscious. Tonic and clonic convulsions and Cheyne-Stokes respiration supervened. On the following day strabismus appeared and there was general rigidity of the muscles of the trunk and extremities, with spasms at intervals. Death occurred on the seventeenth day.

Lumbar puncture was performed a few hours before death, and the spinal fluid obtained was turbid and soon showed a deposit of puriform material in the bottom of the test-tube. A careful study of this deposit by all methods showed a pure culture of the typhoid bacillus.

In considering the diagnosis the author states that in favor of typhoid fever there is the onset, the duration of the disease, the character of the temperature charts, the enlarged spleen, the failure to obtain evidence of the presence of other diseases by means of physical examination, and the negative result of the first lumbar puncture, showing the absence of meningitis at that time.

As against the typhoid diagnosis there was the failure of the Widal test and the occurrence of doubtful convulsions in the early period of the disease. In favor of meningitis, due to the typhoid bacillus, there was the presence in the meninges of a purulent exudate which contained numerous typhoid bacilli, and the failure to detect the presence of other organisms by means of most careful bacteriologic examinations.

Dr. Koplik said that it had been his experience also that in some cases of undoubted typhoid fever, according to the clinical features, the Widal test had been of no assistance. He called attention to some cases reported from the Hopkins Hospital by Dr. Osler in which the diagnosis of typhoid had been verified by autopsies, and yet the reaction to Widal tests were absent throughout the course of the disease.

Dr. Freeman suggested that a negative result with the Widal test means nothing, while a positive result means everything, and hence these cases do not cast any reflection upon the value of the Widal tests.

Dr. Rotch said that he had seen a number of cases with this clinical picture, and had often thought they were cases of meningitis occurring in the course of a typhoid fever, but had had heretofore no proof that such might be the case.

Dr. F. Forchheimer, of Cincinnati, read a paper on

VACCINOID.

The subject of this paper is the peculiar manifestations of vaccinia which have usually been denominated false or spurious vaccinia. The author reviews the work done by French investigators to show the relations of these conditions to vaccinia. According to their classification, by vaccinoid is meant an atypical course of the lesions produced by the act of vaccination and they have, in their external manifestations, the same relation to vaccinia that varioloid has to variola.

Dr. Forchheimer reports a number of cases observed in his own practice, with a careful study of the subject, and offers the following conclusions: (1) Vaccinoid is always modified vaccinia; (2) vaccinoid protects against variola; (3) this protection is less than that of vaccination; (4) vaccinoid in the majority of instances is due to faulty method, rarely to increased resistance or immunity; (5) in primary vaccinations vaccinoid should always be followed by repeated attempts until either true vaccinia is produced or until positive evidences of immunity exist; (6) in the presence of an epidemic of variola vaccinoid should be followed by revaccination, both in primary vaccinations as well as in revaccinations. He believes that the more thoroughly vaccination is done the fewer the cases of vaccinoid, provided the virus is perfect; that vaccinoid is an abortive vaccinia, and abortive vaccinia is not perfect vaccination.

Dr. Freeman believed that these irregularities following vaccination will become much less frequent now that we have an improved lymph supply. He reported 70 vaccinations performed on three successive days, all of which did well. Dr. Putman and Dr. Dorning both took exception to the term vaccinoid, as it seemed to be but another word to burden the literature without really describing a condition. Dr. Forchheimer disclaimed any responsibility for the term, which has already been used quite extensively.

Dr. D. J. Milton Miller, of Philadelphia, read a paper entitled

ACUTE ARTICULAR RHEUMATISM IN INFANTS UNDER ONE YEAR, WITH REPORT OF A CASE.

He made an extensive review of the literature upon this subject, and finds that acute articular rheumatism in infants is very rare. A number of cases has been reported as such which would not bear the test of the essential features of the disease as seen in adults. He then reports an example of genuine acute polyarticular rheumatism in an infant nine months old. He considers that in the diagnosis of such a rare condition as acute articular rheumatism in young infants every other possible cause for the joint affection must be excluded before we can assert that a given case is rheumatic. The points necessary to be established in making such a diagnosis are, mobility, proneness to migrate from joint to joint, absence of all tendency to suppuration, frequency of inflammation of the cardiac serous membranes, the favorable influence of the salicylates, and a family history, together with the absence of such affections as are apt to be attended with inflammation of the joints. According to this test only 19 undoubted instances of acute articular rheumatism occurring in infants under one year were found in the literature.

Dr. Crandall said he thought the condition was more common than this in young children, as he had seen a number of acute attacks.

DR. JENNINGS reported a case occurring in a child of seven months and terminating fatally.

DR. KOPLIK said he had only seen three cases in the course of his practice, but of course their frequency would vary according to the class of material one meets with.

DR. GRIFFITH had never seen but one case.

DR. F. A. PACKARD, of Philadelphia, read a paper entitled

URTICARIA OF THE MUCOUS MEMBRANES.

This paper was written to suggest the possible frequency of the condition of internal urticaria as an explanation of certain cases otherwise difficult to understand, such as the so-called "stomach cough" and "sore throat of indigestion." Dr. Packard then reports the histories of several cases of urticaria associated with asthma or bronchitis, and, with the cases abstracted from literature, finds a total of 34 in which the connection between the skin lesion and the respiratory symptoms is quite close. The order of the occurrence is not uniform, and while in many cases there seems to be a balancing between the cutaneous and respiratory lesions yet the two systems are frequently involved at the same time.

DR. BLACKADER said that in conditions of bronchitis in children he had frequently noticed an eruption on the skin, and that during the time this remained there seems to be a subsidence of the bronchitis.

DR. DORNING had not seen an urticaria of the mucous membrane of children but related two cases occurring in adults.

DR. JOHN L. MORSE, of Boston, read a paper on

THE RENAL COMPLICATIONS OF THE ACUTE ENTERIC DISEASES OF INFANCY.

During the summer of 1898 Dr. Morse examined the urine of 70 infants ill with uncomplicated diarrheal diseases. They were all out-patients at the Infants' Hospital, Boston, and hence many could not be examined more than once. All were under two years of age, 47 being under one year. The urine was obtained by catheterization, scrupulous care being taken as to cleanliness of the catheters. Tables showing the extent of the investigation and the result of the examinations are appended. He believes it probable that more or less marked degenerative changes occur in the kidneys in many, if not most, cases. These degenerative changes are due to the action of bacteria or toxins, usually the latter. Inflammatory changes are rare. Albuminuria occurs in about 15 per cent. of all cases, and casts are found in 60 per cent. of these. The presence of albumin and casts does not justify the term "nephritis," and is not of bad prognostic import.

DR. KOPLIK referred to a paper which he had published in January, giving a report of urine examinations in 65 cases of gastro-enteritis. He found albumin and casts in the majority of cases, but could not trace any connection between the presence of these elements and the clinical symptoms. He did find in the most severe cases a peculiar and distinct form of edema, very like that seen in the severe forms of atrophy with impending death. He agreed with Dr. Morse that the great majority of these cases get well under a conservative treatment and thought that their different findings simply meant that he had struck a run of more severe cases.

DR. ADAMS had examined a considerable number of cases with practically the same results given by Dr. Morse.

DR. CHAPIN said he had been surprised to note what a large percentage of children with diarrhea have albuminuria. As the same condition may be present in other diseases, he suggested the advisability of making a study of the urine in all the ailments of infancy to find out in what proportion of cases the kidney is affected.

THIRD DAY.

DR. FLOYD N. CRANDALL read a paper entitled

SCURVY IN AN INFANT OF SIX WEEKS.

The patient was born October 12, 1898. The father was not in good health, having long suffered from chronic rheumatism, while the mother, who had a valvular cardiac disease following rheumatism, was anemic and did not recover from the effects of confinement for many weeks. The child was not strong, and when seen in the sixth week there was a well-marked condition of scurvy. The child had never taken anything but breast milk, which was very abundant but thin and watery. So abundant was the supply that, though the child nursed frequently, it never emptied the breast and consequently only received "fore-milk," which contains a much smaller amount of fat than does the later milk. The child was allowed to continue nursing, but pasteurized cream was given to make up the proper amount of fat, and the results were prompt and satisfactory so far as the scurvy was concerned, but the child subsequently died from an attack of pneumonia.

DR. GRIFFITH called attention to the statement in a recent text-book that in scurvy occurring before the stage of eruption of the teeth there is no characteristic lesion on the gums, and said that in the collective investigation made by the Society last year 24 such cases had been reported. Of course, the Society did not assume the responsibility for all of these but he felt that certainly all of the reporters could not have been wrong.

DR. KOPLIK reported a case of scorbutus marked by hemorrhage of the gums before the eruption of the teeth.

DR. ADAMS reported two such cases seen in his practice during the past year.

DR. E. E. GRAHAM, of Philadelphia, read a paper entitled

CONGENITAL CYSTIC KIDNEYS, WITH A REPORT OF A CASE.

He saw this baby about twenty minutes after birth. It was well developed but distinctly cyanotic, breathing feebly, and the cyanosis appeared to be more marked than the heart's action and feeble breathing should produce. The body was limp and the child could not be aroused. Death occurred forty-five minutes after birth. The autopsy made four hours later showed a normal heart, small areas of lung tissue containing air, liver, spleen and mesenteric glands normal, and both kidneys cystic.

DR. MILLER gives a full consideration of the etiology and pathology of its condition.

DR. T. M. ROTCH, of Boston, reported

A CASE OF MULTIPLE OSTEOMYELITIS IN AN INFANT.

The patient was a female infant one month old, with a history of a previous erysipelas starting from the umbilicus and running down on the left leg. At the time seen the diagnosis of cellulitis and probable osteomyelitis was made. An incision was made along the inner side of the tibia and an abscess was found under the periosteum. A second abscess appeared at the posterior border of the deltoid. Cultures taken from both these abscesses showed the staphylococcus aureus. The infant died nine days later and the autopsy showed a multiple osteomyelitis.

DR. KOPLIK, of New York, exhibited a new form of binaural stethoscope for infants and children.

DR. CHAPIN exhibited a new tongue depressor for use in examining the throats of babies.

The officers elected for next year are President, Dr. Henry Koplik; Secretary, Dr. S. S. Adams, and Treasurer, Dr. J. Park West.

Recent Literature.

Clinical Diagnosis. The Bacteriological, Chemical and Microscopical Evidence of Disease. By DR. RUDOLF V. JAKSCH, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the German University of Prague. Specially revised by the author from the third English edition of the translation by JAMES CAGNEY, M.A., M.D. Fourth edition, 1899. Philadelphia: J. B. Lippincott Company.

In this latest edition of this very excellent work the author has fully maintained its standard.

The additions to the subject matter, particularly in the chapters upon the blood and the gastric contents, are extensive and of great importance. The book completely omits the mention of one important method of clinical diagnosis which has been established as a result of recent investigations. We refer to lumbar puncture and the examination of the cerebro-spinal fluid in the diagnosis of meningitis. This is certainly a serious omission. With this exception, however, very little of importance which has come to light as the result of the investigations completed at the date of the publishing of the book has escaped the author.

Leçons sur les maladies nerveuses. By E. BRISSAUD, M.D. Second series, pp. 560. With 165 illustrations. Paris: Massar & Co. 1899.

This second series of clinical lectures delivered at the Hospital Saint-Antoine proves even more interesting than the first series, published a few years ago at the Salpêtrière to take the place of those interrupted by Charcot's death. One of the opponents of the didactic lecture in medical instruction recently admitted that there might be a place for the didactic lecture of a clinical type which should present a careful and complete summary of the latest researches on some special point in medicine — a form of lecture, he added, which was rarely delivered in any medical school. The French, more than any other nation, have possessed the secret of such lectures, and the volume before us is one more proof of the fact. The present volume opens with a review of the neuron doctrine, based chiefly upon the teachings of Van Gehuchten, and accepting absolutely his belief that nervous conduction in the neuron is always in one direction. The following lectures deal with the topography of Zoster and other trophoneuroses of the skin in relation to spinal metamerism, and the author has succeeded by his further study of this still obscure problem in giving some explanation of the problem why in spinal disease the sensory disturbances follow two separate types of distribution. A study of the sensory disturbances in some cases of unilateral lesion of the cord affords further information upon this subject. Another group of lectures of special interest in the volume are those upon infantilism and myxedema, in which he demonstrates the dependence of infantalism upon partial atrophy of the thyroid, and differentiates between two types of myxedema — one giving all the physical signs of the disease without the mental apathy, which he considers due to atrophy of the thyroid alone, and the other with the marked mental failure due to atrophy of the entire gland, including the parathyroid elements. When we add that these lectures are written with all the French clearness and vivacity it becomes evident that they well repay perusal by all interested in nervous disease.

Rheumatoid Arthritis: Its Pathology, Morbid Anatomy and Treatment. By GILBERT A. BANNATYNE, M.D. (Glas.), M.R.C.P. (Edin.), Honorary Physician to the Royal United Hospital and to the Royal Mineral Water Hospital, Bath. Second edition, illustrated, pp. xii, 182. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. 1898.

The appearance of the second edition of this monograph attests its popularity. It is certainly a valuable book not only to those particularly interested in the subject of which it treats, but also to the physician at large who desires a completer presentation of this important condition than the ordinary text-book offers. As a result of the writer's further researches in etiology, he is more convinced than before of the bacterial origin of the disorder, and feels justified in distinguishing two forms, one acute and undoubtedly microbic in origin, the other chronic and probably degenerative. The disease is completely discussed from its etiology to its treatment, and liberal bibliographical references given. A chapter of thirty-two pages is devoted to treatment. The book is well illustrated, though not profusely, mainly by photographic reproductions; the paper and type are excellent, and the text entertainingly written. We would recommend the book as a good presentation of the interesting questions at issue regarding the important affection of which it treats.

Text-Book of Ophthalmology. By ERNEST FUCHS, M.D., Professor of Ophthalmology in the University of Vienna. Authorized translation, revised from the seventh enlarged and improved German edition by A. DUANE, M.D., of New York. Pp. 860. With 277 illustrations. New York: D. Appleton & Co. 1899.

This text-book, which has run through seven German editions, is the popular student's text-book in Germany at the present time, and deservedly so, for Dr. Fuchs's text is always clear and concisely put. It is just the sort of book that one would expect from a man who has been a teacher all his professional days.

The translation and editing have been well and discreetly done, and the result is a book of reference for the general practitioner and student which has but few equals.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 19, 1899.

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AN INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

IN the issue of *Science* for October 6th is given the report of the provisional international committee, composed of representative scientific men of various countries, regarding an international catalogue of scientific literature. That the matter is one which will not permit of much further delay, if investigators in any field of research are to keep in touch with the details of their subjects, is evident to any one who follows the growth of special literature.

The multiplication of papers on scientific topics, and the consequent inevitable multiplication of journals and periodicals is doing much to hasten the day of a uniform international index. The discontinuance of the *Index Medicus* has been a decided loss not only to America but to all readers of medical literature. With the rapidly growing development of special lines of research, it is evident that even so ably edited an index as this would soon have been obliged materially to extend its scope, even had the possibility of its adequate support been guaranteed. A point has evidently been reached when a greater degree of co-operation is required, which can only be attained by an international agreement.

To this end a meeting has been held in London, with representation from various Continental countries. Unfortunately, the American delegate was unable to be present. Various propositions were discussed, and certain preliminary action taken, looking to the development and execution of a plan which will be satisfactory to all the countries involved. With reference to the cataloguing of the applications of sciences, it was resolved that technical matters of scientific interest shall be included in the catalogue, but shall be referred to under the appropriate scientific headings; that a general list of journals indexed in the catalogue, with the abbreviations to be used as references, be issued with the first edition of the catalogue, and that a supplement giving the additions to this list be issued annually, and a new addition at the end of five years.

With regard to the frequency of publication of the parts of the catalogue, it was agreed that a volume in each subject be published at least once a year; that it is desirable that in certain sciences there shall be a bimonthly or quarterly issued of the subject catalogue.

Details of management, of expense, and of the attitudes of the various countries, differing in tradition and methods, were discussed, and merely provisional conclusions reached. It is sufficiently evident that difficulties of every sort will meet the promoters of the plan, owing to unavoidable differences of opinion as to the best means of accomplishing an end which all recognize as most desirable. The catalogue is intended to cover all recognized branches of science, among which are included human anatomy, physiology (including psychology, pharmacology and experimental pathology) and bacteriology. Further than this, as regards medicine, the proposed catalogue does not at present go. Evidently, therefore, the new index, comprehensive as its scope is intended to be, will not cover the details of practical medicine, un undertaking which it would probably be useless for it to attempt. For this we must look to other sources; in any case, it is to be hoped that a censorship of some sort may be established, whose function it will be to weed out the mass of communications which add nothing to the sum of knowledge. Such an international index as proposed will doubtless do this for such literature as comes within its province; for the rest we hope a feasible plan may be forthcoming, and be put into active operation. In our issue of September 21st we outlined a plan of abstracts in physiology, proposed by Dr. W. T. Porter, which for that line of research seems entirely practicable. The gradual extension of such a scheme to other branches of medicine would do much to bring about a better state of affairs, and is certainly possible of accomplishment.

The international committee finally agreed to recommend that an international conference, to arrive at a final decision on all matters concerning the catalogue, be held at Eastertide, 1900; that the delegates attending this conference should be charged with full powers to determine both financial and other questions; and that those chosen to act on the international council should be delegates to this conference. We sincerely hope definite results may attend this praiseworthy effort toward a uniform system of classification.

PURE-FOOD LEGISLATION.

UNLESS the matter be forcibly brought to our attention it is not easy to realize how generally we are imposed upon by those whom we may properly call the manufacturers of food. At a recent meeting in Boston of the Farmers' National Congress, Hon. H. C. Adams, Dairy and Food Commissioner of Madison, Wis., presented facts which are well worth our serious consideration. From his showing it would appear that practically all of our food staples may be and

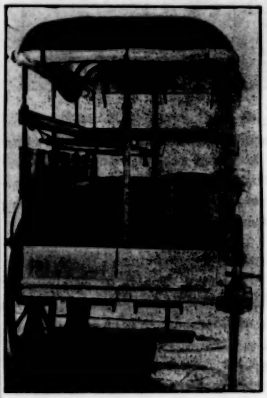
often are adulterated, or actually made outright from substances far removed from the advertised finished product. No doubt the possibility of defrauding the public in this matter increases year by year, as methods of chemical analysis and synthesis are coming to be more generally recognized and understood. It is an easy and a tempting step from such knowledge to its fraudulent use in the manufacture of products which are foisted on the unsuspecting buyers to their detriment and to the great gain of manufacturers. Some of the possibilities in this line we quote from Mr. Adams's remarks:

"The clumsy wooden nutmeg of Connecticut, that even a policeman might detect, has given way to artificial eggs which no hen would recognize, and to artificial butter that never knew milk. The universal demand for cheap things brings a supply. Wheat flour is adulterated with corn flour; buckwheat with wheat middlings. Vermont maple syrup is made that never saw Vermont, and is made from the sap of trees that grow in Chicago. Glucose has dethroned cane syrup. Cider vinegar is distilled from grain. A good portion of the strained honey of commerce never produced any strain upon the bees. Milk is robbed of its cream, filled with lard and sent all over the world to ruin the reputation of American cheese. Oysters are partially embalmed with chemicals. Lemon extracts are made without lemon oil, and vanilla extracts without vanilla. The hogs of the North compete with cheap cotton-seed oil of the South and mix in the same tub under the banner of lard. Artificial smoke is made for hams out of poisonous drugs. Jellies colored in imitation of the natural fruits and sold as fruit jellies flood the markets, although they are almost as destitute of fruit juice as a bar of pig iron. The embalmed-beef business has been exaggerated, but we do not need any for either soldiers or civilians. Canned fruits are preserved with antiseptics which delay the digestive processes. Baking powders under various misleading names crowd the markets. Spices enriched with pepper hulls and ground cocoanut shells are manufactured and sold by the ton. The close partnership which has existed for so many years between coffee and chicory does a thriving business in many States under the firm name of coffee. Cheapness is secured by these adulterations and false labellings, but the people are defrauded."

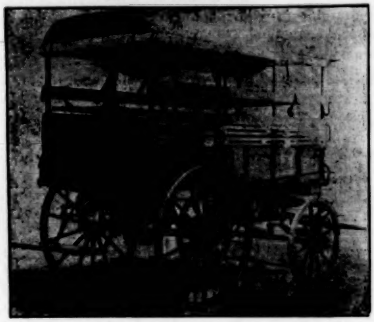
We quote the above statement as an example of what is going on about us, from which the poor, who need legislative protection most, are the chief sufferers. The manufacture of oleomargarine as a substitute for butter is a case in point. The necessity for legislation as applied to this product is said to be recognized now by thirty-two States, which have prohibited its sale under the guise of butter. Massachusetts has been a pioneer in the movement for improved laws, and experience has shown that State laws are usually sustained by the courts. Mr. Adams feels very strongly that we need a comprehensive national pure-food law, which shall so regulate the general question of food that its adulteration for the benefit of the few will no longer be possible. It is evident that such legislation must be somewhat slow in coming; that it will be bitterly opposed and vigorously contested in the courts by the manufacturers of adulterated foods. In the meantime, however, it is desirable that our attention should be called to the matter, and that both as individuals and as a profession, we should do what lies in our power to combat what is clearly a growing evil of very great magnitude.

THE NEW ARMY AMBULANCE.

The new style of army ambulance is the result of extensive investigation on the part of the board of medical officers appointed for this purpose, consisting of Col. Dallas Bache and Capts. G. D. Deshon and E. L. Munson. This vehicle appears to largely avoid the defects noted in the several types of ambulance now in use in the military service. The ambulance is very roomy, the wagon body being much broader than in previous models. Hanging straps, a fixed support in front and a hinged removable pole in the rear, provide means by which two ordinary service litters, in addition to those placed on the floor of the wagon body, may be utilized for recumbent patients, this feature being of great practical value for use in the field, since movement of a patient from the litter on which he was transported to the ambulance is unnecessary. To facilitate the handling of the litters in placing them in position, the back of the driver's seat is hinged. The ambulance is capable of comfortably transporting, in addition to the driver, four recumbent and one sitting patient, or two recumbent and six sitting patients, or eleven sitting patients. The top and movable seats are covered with "pantasote," a new preparation found far superior to canvas or leather for these purposes. Small hammocks, capable of being suspended from several points, are provided for the better carriage of the effects of patients. A large box under the driver's seat affords ample space for the carriage of food, dressings and supplies. The wheels are furnished with unusually broad tires, while the front set "cut under" to facilitate turning. The ambulance is very easy when



in motion and is provided with auxiliary springs, which come into action under a load greater than 500 pounds. The tail gate is fastened with an improved snap lock, which is opened by a single motion. The water is carried in two large galvanized-iron tanks behind the



rear axle, each weighing 50 pounds when filled. They may be filled *in situ* or may be readily removed when desired. They are so placed as to be protected from injury, especially when the tail gate is lowered, as when loaded. The vehicle is strong and solidly built, yet when complete weighs only 1,600 pounds.

MEDICAL NOTES.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION. — The ninth annual meeting of the American Electro-Therapeutic Association was held in Washington, D. C., at Willard's Hotel, on September 19, 20 and 21, 1899. The convention was successful in point of attendance and interest, and a number of papers were read and discussed. The programme included thirty-six papers and the reports of seven standing committees on scientific questions relating to the medical application of the electrical current, with the best electrical apparatus extant. The proceedings of the convention will be found in their annual *Transactions*, to be published at an early date. The officers elected for the tenth year are: President, Walter H. White, M. D., Boston; First Vice-President, D. Percy Hickling, M.D., Washington, D. C.; Second Vice-President, Charles O. Files, M.D., Portland, Me.; Treasurer, Richard J. Nunn, M.D., Savannah, Ga.; Secretary, George E. Bill, M.D., Harrisburg, Pa. The next annual meeting will be held in New York on September 25, 26 and 27, 1900.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, October 18, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 77, scarlatina 23, measles 2, typhoid fever 40.

DEATH OF DR. THERON H. CARTER. — Dr. Theron H. Carter, assistant superintendent at the Boston City Hospital, died suddenly October 13th. He was born in Boston, and was thirty-eight years old. He was a graduate of Brown University of the class of 1890. He graduated from the Harvard Medical School in 1893. Shortly after, he was appointed house physician at the City Hospital, where he served a year and a half. He was appointed one of the superintendent's assistants in 1896, later became assistant superintendent, and was a faithful and useful official.

MORE SMALL-POX IN CHELSEA. — Several new cases of small-pox have been reported from Chelsea since our last issue. The patients have been removed to the new Hospital for Contagious Diseases, and proper precautions taken.

A POSSIBLE DISPOSITION OF THE FRANKLIN FUND. — At a recent meeting held for the purpose of determining the disposition of the Franklin Fund, Alderman Berwin suggested a vote, the essential portion of which follows: "*Voted*, that the whole of the Franklin Fund, or so much thereof as may be necessary for the purpose, be and is hereby appropriated to be devoted to the purchase of sites in the north part of Boston proper, and in those portions of Boston respectively known as East Boston, Charlestown, South Boston, Dorchester, Brighton and West Roxbury, for relief and ambulance stations, to be known as Franklin Relief Stations, and to belong to the City Hospital of Boston, and to the erection of suitable buildings thereon for such stations, and to the proper equipment of such stations for practical use. That the title thereof shall be taken in the name of the trustees of the City Hospital, such selection of sites to be approved by the Board of Trustees of the Franklin Fund before purchase. That the buildings shall be erected under the supervision of an architect by the trustees of the Franklin Fund, who shall, however, as far as may be, carry out the ideas of the Board of Trustees of the City Hospital in respect to the architecture and construction of such buildings. That the Board of City Hospital Trustees shall have full charge of the equipment of such stations for medical and surgical work." The vote did not meet with complete approval.

GROWTH OF PERKINS INSTITUTION FOR THE BLIND. — This institution, which has already done so good a work in the training of the blind, reports continued growth. The total number of pupils at present is about two hundred and fifty. The accommodations have been increased by the building of a new cottage, thereby facilitating admission to the institution. Manual training has been carried on in a systematic manner, and has proved a valuable adjunct in the general teaching.

NEW YORK.

LOOMIS SANITARIUM BURNED. — The Loomis Sanitarium at Liberty, Sullivan County, New York, for

the treatment of tuberculosis, was destroyed by fire October 14th. No lives were lost. The sanitarium was built in 1895 by J. P. Morgan, in remembrance of the late Dr. Loomis, of New York City. The main building was constructed entirely of stone and closely surrounded by a number of cottages. The fire will cripple but not destroy the usefulness of the institution, for accommodations remain for many patients in the cottages and annexes scattered about the grounds. The total loss, including contents, is about $100,000, on which there is about $50,000 insurance.

State Dispensaries. — The State Board of Charities, under whose jurisdiction the dispensaries of the States were placed by law the first of the month, held a meeting in Albany on October 11th and decided finally on the rules and regulations to be promulgated for the management of these institutions. Among these are the following: Both visiting and assistant physicians and surgeons shall serve for terms of three years, this provision being adopted with the idea of affording an opportunity for a larger number of young practitioners to enter dispensary service than has hitherto been possible. Prompt and regular attendance by those holding such appointments is required. At least two women shall be appointed on all boards of managers of institutions treating women and children. In each dispensary there shall be a registrar, whose duty it shall be to receive all applicants for treatment and generally supervise the work of the institution; also a matron, who is to give attention to women patients in addition to keeping the building in order. All emergency cases and all patients known to be needy are to receive immediate treatment. When there is doubt as to the inability to pay the registrar must cause an investigation to be made, and place the result on file. Treatment shall be refused to all applicants refusing to sign a declaration of their inability to pay, and passcards must have printed on them the penal provision of the law. In large cities it is suggested that investigations may often be made best through charity organization societies. No cases shall be utilized for clinical purposes without the consent of patients or their parents. Dispensary druggists must be licensed apothecaries. It shall be the duty of the managers to have sanitary inspection of the dispensary building made every three months by the local health boards.

Fatal Case of Tetanus. — A fatal case of tetanus is reported in a child of four years in Williamsburg, Brooklyn, in which the disease was the result of wounds of the face inflicted by the bill of a rooster.

ARMY NOTES.

Heroism of a Surgeon. — In the recent attack on Novaleta, P. I., Assistant Surgeon C. D. Langhorne, U. S. Navy, serving with the battalion of marines, was wounded. Of his conduct on that occasion Admiral Watson cables, "Langhorne was wounded early while dressing Hill's wound; he continued caring for the wounded and sick the entire day and deserves high praise." Dr. Langhorne was born in Virginia, was educated at the Virginia Military Institute and graduated in medicine from the University of Virginia. He entered the navy in July, 1898, and was sent to Manila on the naval hospital ship *Solace*.

Hospital on Corregidor Island. — A new hospital, intended for use by convalescents, is now nearing completion on Corregidor Island, in Manila Bay. When completed it will cost about $65,000. The buildings are of wood, the main building containing three large wards, with an isolation ward for the treatment of contagious diseases. Other buildings are designed for use as quarters, administrative purposes, kitchen and dining-room, refrigerating plant, etc.

United States Hospital Ship "Missouri." — The United States Army hospital ship *Missouri* is reported as having arrived at Gibraltar *en route* to Manila.

Meeting of Association of Military Surgeons. — The eighth annual meeting of the Association of Military Surgeons was held at Kansas City on September 27th, 28th and 29th. Much interest was evinced in the sessions, although the attendance was small as compared with that of previous years, due probably to the distance of Kansas City from the Eastern States, where the bulk of the National Guard is located, and also to the celebrations incident to the return of Admiral Dewey. In addition, many of the members of the regular army are now in foreign service and found it impossible to attend. A strong effort was made to have the next meeting of the Association held in San Francisco, but it was finally decided to hold the session for 1900 in New York City during June. Col. C. H. Alden, Assistant Surgeon-General U. S. Army, who has done much to establish the Association on a successful and permanent basis, was elected president for the ensuing year.

Enlistments in the Hospital Corps. — As an instance of the magnitude of the work being carried on by the Medical Department of the Army, it is of interest to know that the enlistments in the hospital corps since the outbreak of the war with Spain exceeded the number of enlistments in the entire army of the United States during the year previous to the outbreak of hostilities. The enlistment and disposition of this force has been carried on without any great increase in the clerical strength of the Surgeon-General's Office. At the school of instruction for the hospital corps located at Washington Barracks, D. C., there were received, instructed and distributed during the period from June 30, 1898, a total of 968 men. From April 30, 1898, a date practically marking the outbreak of hostilities, to September 30, 1899, a period of seventeen months, no less than 1,510 men passed through this school, an average of about 89 men per month.

Miscellany.

MOSQUITOES AS CARRIERS OF MALARIA.

The expedition sent to Sierra Leone to investigate the habits of the mosquitoes of the genus *Anopheles* has arrived at certain definite results, some of which are given by a correspondent in the *British Medical Journal* for September 30th. The distinguishing marks of this variety as contrasted with *Culex* are very marked, not only in the adult forms but also as larvæ, which appears to be of more practical importance; the larvæ of both varieties breed in water, but with the following difference:

"*Culex* larvæ, when disturbed, immediately wriggle down to the bottom of the water. On the other hand, *Anopheles* larvæ can move not only in this manner but with a few rapid jerks along the surface; indeed, this seems to be their more common kind of progression unless much disturbed, when they sink to the bottom. These details, trifling as they may appear to be, are probably of first importance as regards tropical sanitation, because it follows that pools which contain flat-floating surface-moving mosquito larvæ may be considered to be foci of malaria.

"*Culex* larvæ live everywhere in warm countries — in almost every pot, tub, well, cistern, broken bottle, empty sardine tin, or anywhere where a little water lodges. It must be observed, therefore, that the sources of *Culex* cannot well be removed by drainage of the soil, being dependent more on slovenly domestic arrangements than on anything else. In fact, the common species of *Culex* are essentially domestic animals. Neither are they very dependent on rain, slop water, drains, garden tubs, etc., being found at all seasons. Now, as Ross has pointed out, malaria is amenable to drainage and is largely influenced by the rainfall, while its distribution is very local and not nearly so general as that of at least the commoner species of *Culex*. Hence his inference that malaria depends on a kind of mosquito which breeds not in pots of water but in puddles on the ground.

"The recent work of the expedition has given ample confirmation of this view. *Culex* is essentially a pot-breeding mosquito; *Anopheles*, a puddle-breeding mosquito — or even a stream-breeding mosquito. Hence the familiar laws of the prevalence of malaria. But *Anopheles* not only requires puddles to breed in but puddles of a certain kind. Hence the practical importance of the subject.

"Further than this *Anopheles* larvæ are found in puddles containing algæ. But there is more than a mere association between the larvæ and the algæ; the former eat the latter. It has been found that larvæ hatched from the egg will not grow unless given large quantities of algæ, which they are seen to devour rapidly, while the crops of the larvæ caught in the puddles are found crammed with the same weed. Hence it would appear as if *Anopheles* is, in the larval stage, essentially an algæ-eating insect, and an insect which generally, if not always, breeds in association with that vegetable.

"From a theoretical point of view these observations are of interest, because they satisfy and explain some long-known laws of the diffusion of malaria — such as the connection of the disease with rainfall and stagnant water, its disappearance on drainage of the soil, and so on. The supposed influence of turning fresh soil may be explained as being due to the formation of *Anopheles* puddles. From a practical point of view, however, the observations just given are still more important, because they enable us to avoid draining a whole malarious area, a thing which few towns in the tropics can afford; and by teaching us how to indicate with scientific certainty the precise foci of malaria enable us to reduce the cost to a minimum by dealing only with the actually dangerous spots. A little consideration will show that level ground is almost a necessity for pools containing algæ, at least in the season of heavy rains. At present when a heavy tropical shower falls almost every six hours all the watercourses with any slope are scoured out so deeply that the bare rock is exposed, while after the shower, because of the same slope, all the water, except in a few pools in the rock, drains away almost at once. Mosquito larvæ can never live in such places."

Evidently the recognition of the larvæ and their habits of life is the first step toward their extermination. If the researches alluded to above stand the test of further experience, we may certainly look for positive and efficacious prophylactic measures directed against the spread of malaria.

Correspondence.

PHILADELPHIA LETTER.

Medical Schools: Medico-Chirurgical, Woman's, Jefferson, University of Pennsylvania.

Philadelphia, Pa., October 8, 1899.

Mr. Editor: — The Philadelphia medical colleges have begun work this year under favorable auspices. The Medico-Chirurgical opened its nineteenth session with an address by Prof. Charles W. Burr. Nearly one hundred first-year students have matriculated, and a handsome and capacious new building on the corner of Seventeenth and Race Streets is well advanced in construction. This building is of stone, brick and steel, and will be the most important building yet erected for the college.

The Woman's Medical College begins its fiftieth session, and the Jefferson College begins its seventy-fifth session. The new six-story building of Jefferson, at Tenth and Walnut Streets, was thrown open to inspection on October 2d. This structure was designed by James H. Windrim, an architect of wide experience in the construction of public buildings, and this last creation embodies all that could possibly be desired in the space at his command. The frontage is 118 feet on Walnut Street and 108 feet on Tenth Street, in the heart of the business portion of Philadelphia, adjacent to the old buildings and near the Jefferson College Hospital, which will still be used for clinical teaching. The structure is, in the main, fireproof. An iron stairway and a steam elevator, centrally placed, afford access to all parts of the building and facilitate ventilation. There is a smoke-proof tower, or fire escape, with access from the adjoining rooms by means of a system of balconies on the outer wall, enclosed within the building, thus avoiding the unsightly appearance incident to fire escapes on external walls. The chemical laboratory, 21 by 76 feet, does not appear capacious enough for the large classes at Jefferson, especially as it is the intention to use this laboratory for both first and second-year work.

The physiological laboratory, immediately above, is well equipped with modern apparatus for class work. Under the direction of Profs. Henry C. Chapman and A. P. Brubaker this department of medical instruction has attained a high degree of excellence. Other laboratories for pharmacology, histology and pathology, a valuable pathological museum with handsome new cases, lecture halls and an

amphitheatre, etc., give facilities which have long been needed by the college. Much has also been done for the personal comfort of students, and this will react favorably on the course of instruction. No changes of importance have occurred in the faculty.

The Medical Department of the University of Pennsylvania opened on October 2d with about one hundred and thirty first-year students. The entrance examinations, applicable to those who do not hold college degrees, include a good knowledge of English literature, Greek and Roman history, algebra and physics; and examinations in either Latin and Greek, or Latin, French and German. The Greek includes Xenophon and Homer, and the Latin, Cicero, Cæsar and Virgil. The following are some of the entrance papers used last month:

GREEK HISTORY (answer the first question and five of the others): (1) Draw a map of Greece and locate Thermopylæ, Mt. Olympus, Corinth, Delphi, Thebes, Bœotia, Corcyra, Melos, Sparta and Actium. (2) What effect had the indented coast line of Greece upon the development of her people? (3) What Greek state sent out most colonies, and for what reason? (4) Describe the education of a Spartan youth. (5) What were the respective elements of strength and weakness in the Athenian Empire in the time of Pericles? (6) What were the general causes of the Peloponnesian War? (7) Define ostracism and give two examples. (8) What is meant by the "Socratic dialogue"?

ROMAN HISTORY (answer the first and five of the others): (1) Draw a map of the Roman Empire in the Age of Augustus, locating ten Provinces. (2) What was the commercial importance of the situation of Carthage? (3) What were the Licinian Laws? (4) What were the duties of the consul, censor, quæstor? (5) Who were Fabius Maximus, Spartacus and Sallust? (6) How was Gaius Gracchus overthrown? (7) Why did Catiline secure support? (8) Describe a Roman school.

ENGLISH HISTORY (answer the first and five of the others): (1) Draw a map of England and locate Sussex, London, Bristol, Cambridge and Chester. (2) Why was the English resistance to the Danes so unsuccessful? (3) What were the effects of the Norman Conquest on language, art and trade? (4) What made Henry II so famous? (5) What were the principal lines of English trade in the fourteenth century? (6) Define Lollards, chivalry, the poll-tax, the mendicant friars. (7) What religious parties were there in England at the time of the accession of Elizabeth? (8) How did a republic come into existence in England in the seventeenth century?

PHYSICS: (1) State the laws with formulas for uniformly accelerated motion. A stone thrown vertically upward rises 78.4 m. With what speed did it start? (2) Calculate in dynes the weight of 1 litre of mercury (sp. gr.=13.6). State the laws of the pendulum. (3) Upon what does the speed of sound depend? Explain the "law of inverse squares" as applied to sound. (4) Define the unit of heat. How much heat will change 1 g. of ice at temp. of $-80°$ C. to steam at $200°$ C? (5) Draw a diagram of a convex lens showing the relation of object and image. Explain briefly a microscope. (6) What is electric induction? State Ohm's law and define the units involved.

The faculty of the Medical Department of the University of Pennsylvania has lost the services of Dr. Charles B. Penrose, professor of gynecology, who resigned because of ill health. The trustees have appointed Dr. John G. Clark, associate in gynecology at Johns Hopkins University, to fill the chair, and he will be formally elected at the next meeting. Dr. Clark is to enter at once on the duties of his position. Dr. Simon Flexner, of Johns Hopkins, has been elected professor of pathology, and these two appointments give general approval. Dr. Clark has declined appointment to two other leading medical schools in this country in order to accept the place at Pennsylvania. He is thirty-two years old and graduated from the University of Pennsylvania in 1891. Dr. Clark served as resident physician in the Children's and in St. Agnes's Hospitals in Philadelphia, and Bellevue Hospital in New York, and of late has been closely associated with Prof. Howard A. Kelly at the Johns Hopkins. He has also had the benefit of the best European training. Dr. Simon Flexner's appointment is of several months' standing, and he has just returned from a trip to the Philippines.

Provost Harrison recently announced the gift of $50,000, which had been made within the past few days by a donor who does not wish his name to be made public at this time, to be used for the additions to the dormitory system now being extended. Contracts calling for the expenditure of several hundred thousand dollars have been made, and when completed students at the University will be in possession of the most perfect system of dormitories in this country, representing a total outlay of about $1,000,000.

GLYCERINIZED VACCINE LYMPH AND VACCINE POINTS.

DOVER, N. H., October 16, 1899.

MR. EDITOR: — Under "Medical Notes" in your issue of October 5, 1899, is a reference to statistics collected by Dr. Albert C. Barnes, of Philadelphia, in regard to the various methods of vaccination and their efficacy. He finds that when glycerinized lymph is used vaccination is successful in from 90 to 100 per cent. of primary cases, and that a high estimate of successful "takes" from vaccine points is shown to be not over 60 per cent. in primary cases. I am astonished at the conclusion arrived at in regard to the frequent alleged failure of vaccine points. I vaccinated 106 primary cases between August 29 and October 5, 1899, using vaccine points exclusively, and had only six failures.

Yours truly,

JOHN R. HAM, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 7, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung disease.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1174	436	10.16	11.44	4.88	1.69	2.08
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	206	57	24.00	8.64	1.92	3.36	6.72
Baltimore	506,389	167	49	15.60	12.00	6.60	3.60	3.60
Cincinnati	405,000	92	—	15.26	10.90	6.54	2.18	4.36
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	325,000	—	—	—	—	—	—	—
Washington	277,000	121	30	16.20	12.15	4.86	4.86	6.48
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	47	18	19.17	4.26	6.39	8.52	2.13
Nashville	87,754	34	6	14.70	5.88	2.94	5.88	5.88
Charleston	65,165	26	7	3.85	15.40	—	3.85	—
Worcester	111,732	28	6	14.28	10.71	10.71	3.57	—
Fall River	103,142	33	18	3.03	12.12	3.03	—	—
Cambridge	92,520	22	7	20.65	16.60	8.30	—	12.45
Lowell	90,114	31	18	19.38	6.46	16.15	—	—
New Bedford	76,511	11	6	27.27	9.09	9.09	—	—
Lynn	69,218	23	5	4.35	4.35	—	—	—
Somerville	64,384	9	3	11.11	22.22	—	11.11	—
Lawrence	59,072	14	6	28.56	21.42	21.42	—	7.14
Springfield	58,266	17	6	29.40	17.64	5.88	5.88	17.64
Holyoke	44,510	13	8	46.14	23.07	38.45	—	—
Brockton	38,759	—	—	—	—	—	—	—
Salem	37,723	13	5	—	15.38	—	—	—
Malden	38,421	2	1	—	—	—	—	—
Chelsea	34,235	14	2	—	—	—	—	—
Haverhill	32,651	7	3	—	7.14	—	—	—
Gloucester	31,428	3	1	33.33	33.33	—	33.33	—
Fitchburg	30,523	8	4	12.50	—	—	—	—
Newton	30,461	6	5	—	—	—	—	—
Taunton	28,527	11	4	27.27	9.09	—	—	18.18
Everett	28,102	6	1	16.66	16.66	16.66	—	—
Quincy	24,578	—	—	—	—	—	—	—
Pittsfield	23,471	4	1	—	—	—	—	—
Waltham	22,791	8	2	—	—	—	—	—
North Adams	21,883	7	1	—	28.56	—	—	—
Chicopee	18,316	8	6	37.50	12.50	37.50	—	—
Medford	17,190	4	1	—	—	—	—	—
Newburyport	15,936	2	—	—	—	—	—	—
Melrose	14,721	1	—	—	—	—	—	—

Deaths reported 2,188; under five years of age 728; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 280, consumption 250, acute lung diseases 156, diarrheal diseases 149, diphtheria and croup 73, typhoid fever 53, whooping-cough 12, cerebro-spinal meningitis 12, scarlet fever 5, measles 5, erysipelas 2.

From whooping-cough New York 8. Lowell, Lynn, Fitchburg and Taunton 1 each. From cerebro-spinal meningitis New York 5, Baltimore 3, New Bedford 2. From scarlet fever New York 2, Providence, Charleston and Holyoke 1 each. From measles New York 5.

METEOROLOGICAL RECORD

For the week ending October 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...1	30.37	46	53	39	64	59	62	N.W.	N.	17	13	C.	C.	
M...2	30.46	40	45	34	66	61	64	N.W.	N.	8	11	O.	O.	
T...3	30.40	44	52	35	63	50	56	N.	N.W.	15	7	C.	C.	
W...4	30.28	50	65	36	60	49	54	W.	S.W.	8	12	C.	C.	
T...5	30.12	62	71	53	66	66	66	W.	W.	9	5	O.	C.	
F...6	29.86	54	57	50	88	94	91	N.W.	N.	3	20	R.	R.	.67
S...7	30.09	52	60	45	73	69	71	N.	N.	12	4	C.	C.	.02
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 13, 1899.

J. A. HAWKE, medical inspector, promoted to medical director.

P. A. LOVERING, surgeon, ordered to the Mare Island Navy Yard.

D. O. LEWIS, surgeon, detached from the Mare Island Navy Yard and ordered to the "Iowa."

M. H. SIMONS, surgeon, detached from the "Iowa" and ordered to Washington, D. C., October 23d, for examination for promotion and then home to wait orders.

L. W. ATLEE, surgeon, detached from the "Solace" and resignation accepted.

C. P. BAGG, passed assistant surgeon, detached from the "Pensacola" and ordered to the "Solace."

J. E. PAGE, passed assistant surgeon, ordered to the "Pensacola."

W. H. WHEELER, assistant surgeon, detached from the "Solace" and ordered home to wait orders.

C. A. SIEGFRIED, medical inspector, detached from the Torpedo Station, Newport, R. I., October 17th, and ordered to continue in charge of the Naval Hospital, Coasters Harbor Island, R. I.

J. M. STEELE, surgeon, ordered to duty at the Torpedo Station, Newport, R. I., October 17th.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING OCTOBER 12, 1899.

MURRAY, R. D., surgeon. To proceed to Miami, Fla., for special temporary duty. October 3, 1899.

GARDNER, C. H., passed assistant surgeon. Granted leave of absence for two days. October 4, 1899.

CORPUT, G. M., assistant surgeon. To report to medical officer in command, Baltimore, Md., for duty and assignment to quarters. September 29, 1899.

FOX, CARROLL, assistant surgeon. Relieved from duty at Baltimore, Md., and directed to report to medical officer in command of the Reedy Island Quarantine Station for duty and assignment to quarters. September 29, 1899.

PRIMROSE, R. S, acting assistant surgeon. Granted leave of absence for six days. October 4, 1899.

MILLER, CHARLES, hospital steward. Granted leave of absence for twenty-one days from October 8th. October 5, 1899.

MURRAY, R. D., surgeon. To proceed to Key West, Fla., for special temporary duty. October 7, 1899. To assume command of the Service at Key West, Fla., in accordance with orders of May 15, 1899. October 12, 1899.

CARRINGTON, P. M., surgeon. To proceed to New York, N. Y., as inspector of unserviceable property. October 11, 1899.

PERRY, T. B., passed assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899.

WOODWARD, R. M., passed assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899.

VAUGHAN, G. T., passed assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Bristol, Tenn., for special temporary duty. October 11, 1899.

DECKER, C. E., assistant surgeon. To proceed to San Diego, Cal., and assume command of the Service, relieving Assistant Surgeon L. E. COFER. October 7, 1899.

GREENE, J. B., assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899.

DEATH.

W. R. MCADAM, assistant surgeon, died of yellow fever at Key West, Fla., October 12, 1899.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — The first meeting of the Society for the year 1899-1900 will be held at the Medical Library, 19 Boylston Place, on Monday evening, October 23, at 8 o'clock.

Dr. Chas. Harrington will a paper entitled "Disinfection and Prevention in the Sick-room."

A. K. STONE, M.D., *Secretary*, 637 Boylston St.

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a stated meeting at 19 Boylston Place on Saturday evening, October 28, at 8 P. M.

Papers: "The Hospital for Chronic Disease," Dr. E. W. Taylor. Discussion by Drs. Abner Post and J. J. Minot.

"Some Points in the Diagnosis and Treatment of Diseases of the Chest," Dr. Richard C. Cabot. Discussion by Drs. H. F. Vickery, Geo. F. Sears and Henry Jackson.

Business: Election of a committee of five to prepare a list of candidates for officers of the Society.

Supper after the meeting.

HERBERT L. BURRELL, M.D., *President.*
HOWARD A. LOTHROP, M.D., *Secretary*,
10 Marlborough Street.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, October 25, 1899, at 8 P. M.

Papers: Dr. E. S. Boland, "Unlooked-for Dystocia in Certain Multiparæ."

Dr. Edgar Garceau: "A Case of Extirpation of Kidney and Ureter for Tubercular Disease."

R. A. KINGMAN, M.D., *Chairman.*
C. H. HARE, M.D., *Secretary.*
285 Marlborough Street.

SUFFOLK DISTRICT MEDICAL SOCIETY, CENSORS' MEETING. — The Censors of the Society will meet for the examination of candidates at the Medical Library, 19 Boylston Place, on Thursday, November 9th, at 2 o'clock.

Candidates should make personal application to the Secretary between 2 and 3 and present their medical diploma, or its equivalent, at least three days before the examination.

HOWARD A. LOTHROP, M.D., *Secretary.*
10 Marlborough Street.

AMERICAN PUBLIC HEALTH ASSOCIATION. — The twenty-seventh annual meeting of the Association will be held at Minneapolis, Minn., Tuesday, Wednesday, Thursday and Friday, October 31, November 1, 2, 3, 1899.

NEW YORK STATE MEDICAL ASSOCIATION. — The sixteenth annual meeting of the Association will be held Tuesday, Wednesday and Thursday, October 24, 25 and 26, 1899, at the New York Academy of Medicine.

RECENT DEATH.

PEDRO Y. JIMINEZ, M.D., a graduate of Bellevue Hospital Medical College, and until recently house surgeon at the Columbus Hospital, died in New York at the age of twenty-eight years. He was a native of Porto Rico and had intended returning there to practise.

BOOKS AND PAMPHLETS RECEIVED.

Burdett's Hospitals and Charities, 1899; The Year-book of Philanthropy and Hospital Annual. Tenth year. London: The Scientific Press, Limited. 1899.

An Introduction to Dermatology. By Norman Walker, M.D. With a frontispiece, 29 plates and 34 illustrations in the text. New York: William Wood & Co. 1899.

Informes Rendidos por los Inspectores Sanitarios de Cuartel y los de los Distritos al Consejo Superior de Salubridad Correspondientes al Año, de 1898. México. 1899.

The Disease of Convulsive Tic (Gilles de la Tourette's Disease), with Special Reference to a Hypothesis as to Etiology. By Bernard Oettinger, M.D., Denver, Colo. Reprint. 1899.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and subjects. Second series. Vol. IV. Washington: Government Printing Office. 1899.

Original Articles.

ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE SURGICAL INTERVENTION.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

(Continued from No. 16, p. 384.)

Besides the foregoing cases I have had the opportunity of seeing a large number of similar cases in the hands of my colleagues. The same general results have occurred; the same brilliant successes in extra-uterine pregnancies, in tumors with twisted pedicles, in inflammations of the gall-bladder — in fact, in all the lesions in which from their nature intervention is usually in good season; the same deplorable failures in general peritonitis, in acute obstructions, in intestinal extravasations — cases in which from their very nature intervention must be as a rule too late.

The list of deaths in the classes of cases here presented is appalling, especially in view of the fact that every class admits of cure if the remedy is applied early enough. It is true that some are vastly more serious and more quickly beyond aid than others; some will have a considerable mortality, even if operated upon without the least delay; some, if operated upon within a period that admits a possible cure; but the fact that all are theoretically curable makes the excessive mortality especially humiliating.

Is it not a duty, therefore, for those of us who see many of these cases to demonstrate again and again, as far as human error and frailties will permit us, those signs by which possible impending disaster may be recognized, to emphasize on every occasion the one great cause of disaster in these formidable lesions — the unnecessary loss of time; and to shorten as much as possible the interval that must elapse between nature's first call for help and the surgeon's response? An affirmative answer cannot be too emphatic, especially when we remember that in spite of years of discussion and experience the frequency of deaths in these cases still proves the necessity of an earlier appreciation of initial symptoms and a quicker resort to the knife.

The chief reason why valuable time is lost is plain and it must be repeated time and again; the call for help is not heard, or if heard it is not understood; or even if heard or understood, it is not answered.

Let us consider briefly the reasons for such failure to respond. That they are natural and seem sufficient I admit; that they are insufficient, I must nevertheless assert.

The fault, if it can be called a fault, lies with us who see these things and do not impress their importance upon the attending physician. That a practitioner who encounters, perhaps for the first time in his life, intussusception, pancreatic hemorrhage, perforation of the stomach, or even the more common lesions, internal strangulation, ectopic gestation, appendicitis — that a practitioner should not be blamed for not recognizing such a lesion is obvious. The most experienced may fail. That he should not be able, however inexperienced, at least to suspect such emergencies is the fault of his teachers.

The first and most important symptom in the lesions enumerated in the foregoing pages is pain. The only exception is in post-operative hemorrhage, which is often so insidious in its onset as to excite no alarm. I have known death to take place from hemorrhage from a stitch-hole, unsuspected till the last moment.

Nature first calls for relief by a symptom that in itself is urgent and irrepressible — pain — the expression of which cannot but make itself appreciated by every one who sees the patient. I have been impressed by the invariable occurrence of this call — this shout, as it were — for help. By what more effectual symptom could extreme urgency be expressed, what symptom more likely to demand instant relief?

As a matter of fact, pain is the initial symptom of all the lesions under consideration; but it is also characteristic of disturbances of function — of indigestion, intestinal catarrh, neuralgia, and the like. It is therefore imperative that pain, as a symptom, be closely scrutinized.

Though the character of the pain varies, there is but one attribute of importance — the quality of gravity. Are we, however, to interpret abdominal pain as a demand for immediate laparotomy? If not, what kind of pain does demand it? Where situated? Is it sharp or dull, continuous or intermittent, localized or wandering? Does it depend upon serious lesions? Is it accompanied by signs confirming disaster? Could we interpret the exact meaning of pain, there would be little need of this discussion; but pain in the abdomen is a very common symptom. Attacks of transitory colic, acute indigestion, cholera morbus, neuralgia, constipation, are so common, and in most cases so well understood by the patient, that he takes upon himself the responsibility of not calling a physician. The pain of serious lesions, on the other hand, almost always impresses its gravity upon the patient, so that its manifestations can almost be seen. Yet such pain, even if made conspicuous by cries and writhings, is not always indicative of serious trouble — as, for example, the great suffering caused by a sharp attack of cholera morbus, or acute indigestion, or of renal or hepatic colic. The pain of grave abdominal lesions usually has, however, a character of its own by which its gravity is at least suspected. It is followed, if not immediately accompanied, by signs that prove its seriousness. Moreover, they prove it within the limits of time that permit of successful operative cure.

Pain may be severe enough to cause, of itself, other symptoms apparently serious, as, for example, nausea and faintness — a combination very suggestive of hemorrhage. With subsidence of the pain, however, the color and the normal pulse rate return; the patient rallies, and is well long before a physician can respond. When dependent upon hemorrhage, pain is followed by a pallor and faintness that become more and more profound until the true cause is obvious.

Abdominal pain, *per se*, may produce a rigidity of the abdominal muscles that may for a time cause uncertainty, especially if there is vomiting. But this combination, if owing to an acute indigestion or a cholera morbus, rapidly subsides. The vomiting is followed by diarrhea; the pain is evidently paroxysmal intestinal colic. If caused by the passage of a renal or an hepatic stone, the rigidity may be marked, and it may persist for some time after the escape of the stone.

Pain which is of itself ominous produces upon the patient an effect of gravity, as shown by his face, which expresses suffering, anxiety and shock. Indeed, the well-known facies of peritonitis is but an advanced stage of the initial expression.

[1] An oration before the Maine Medical Association, June 8, 1899.

Pain that means a sudden, serious abdominal lesion may have the quality of the pain produced by functional causes. It may be sudden, sharp, and paroxysmal, or dull and continuous. It may cause violent expressions of suffering; it may seem ominous to the last degree, but it is usually unimportant unless it is accompanied by the symptoms of shock.

The symptoms of shock may not be marked; they may even be masked, but sooner or later they manifest themselves, and add the first important evidence as to the gravity of the situation.

However sudden the onset of the disease may be, aid cannot reasonably be expected until the symptoms of shock are developed enough to be recognized. By shock, I mean those symptoms which result from sudden, violent invasion of the peritoneum by septic material or by blood, as well as from those severe structural lesions suddenly induced by changes in position of an organ, or by failure of its blood supply. To the former class belong extravasation from the alimentary canal, and extra-uterine pregnancies; to the latter, tumors with twisted pedicles, mesenteric embolism and thrombosis, intussusceptions, and the like. In both classes there is violence done the peritoneum; in the one case by a micro-organism or by blood, in the other by blood stasis. In the second class sepsis plays a part as soon as necrosis becomes complete. This violence to the peritoneum supplies, in addition to pain, those unmistakable signs which demand in the strongest terms immediate exploration. These symptoms are local and constitutional. Locally are produced tenderness and muscular rigidity; remotely, nausea, vomiting, and increased pulse. The temperature may be unaffected, or even depressed. It soon begins to rise, however, and in doubtful cases it may be watched for an hour or more until an unmistakable elevation adds the evidence necessary for decision.

The period of invasion of spreading peritonitis, of increasing hemostasis and gangrene, is practically the earliest stage that we can reasonably expect to see. To be at hand the moment after the occurrence cannot be expected except in the rarest instances. Fortunately we are generally in good season, if we are present at the period of invasion; but we must recognize the necessity for intervention. Yet emergencies which are promptly recognized, even when arising in hospitals, are not always successfully treated, for even there minutes must pass before intervention can be practised. Lest some may condemn themselves too seriously for delay, it may be of interest to refer to a few cases. In one case a young woman admitted to my wards at the Massachusetts General Hospital was said to have some uterine trouble. She had not been in the hospital long enough even to be examined when she was suddenly attacked with pain in the abdomen, became collapsed, and died. An extra-uterine pregnancy had suddenly ruptured, and death had resulted from hemorrhage and shock. She was beyond aid before the house surgeon could get to the ward.

Many such cases could be brought up, showing that even when aid is at hand in the earliest hours of the attack, and the necessity for intervention is clear, the result is not always favorable if, added to pain, there are the confirming symptoms of shock and sepsis. On the other hand, the results of early intervention in serious cases are often brilliant. A man with gunshot wound of the abdomen was recently brought to the hospital. The shooting occurred near by, and I happened to be at the hospital at the time. The indications of intestinal perforation were clear — pain, tenderness and rigidity were present. The wounds in the intestine were successfully repaired within an hour from the time they had been received. There can be no doubt that in this case success depended upon the early intervention, and that intervention was early because pain, with local and constitutional signs, pointed directly to its necessity.

As already stated, pain of itself is rarely a sufficient indication for surgical intervention, no matter what its character may be. Not that pain alone, occurring in the course of well-recognized diseases — typhoid fever, abscesses, tumors and the like — may not be a sufficient indication, for pain has an almost unmistakable significance under such circumstances, but he would be a rash surgeon who for pain pure and simple in a person apparently well would immediately open the abdomen.

The weight to be given to signs accompanying pain is extremely important. They are constant, but vary with the nature and severity of the lesion. It must be borne in mind that this consideration applies to symptoms rather than to lesions; that evidence sufficient to demand exploration may be insufficient for an exact diagnosis. While, therefore, symptoms may in a general way suggest a lesion, should we wait until they are clear enough to establish the diagnosis we should lose forever the favorable moment for intervention. Fortunately we have in the earliest stages those confirmatory signs already mentioned — nausea, vomiting, shock, tenderness and rigidity.

The depth of shock in the beginning indicates in a general way whether the lesion is hemorrhage or not. In hemorrhage it is great, and often out of proportion to the amount of blood lost. When due to slight hemorrhage, shock rapidly subsides, — the patient may even be rallying, — an event that justifies delay.

In shock from sepsis (and by shock I mean general constitutional depression, with elevation of pulse, pallor, cold extremities, perspiration, with or without lowered temperature) there is less pallor, less elevation of pulse and less depression of temperature; reaction is rapid. In the early hours the distinction between hemorrhage and the other lesions enumerated is usually possible.

Always excepting cases of hemorrhage, we shall find that the pulse has fallen, that the temperature is rising, and that local symptoms are becoming more and more pronounced. Of these, muscular rigidity and tenderness are the most important, if not the only signs. In hemorrhage blood enough may have escaped to cause dulness in the flanks; in intussusception the sausage-like tumor may be felt; in thrombosis resistant coils; in various lesions a sensitive mass; but even in these cases the muscular spasm generally will be so great as to mask everything beneath. Moreover, tenderness aids spasm in preventing palpation. Both together make deep examination without ether impossible.

The value of symptoms confirmatory of serious lesions, in which the pain and shock already described are noted, should each receive especial consideration, for they are often misleading.

The pulse from the onset to full development of a lesion varies extremely. In shock it usually increases in rapidity, whether the cause be hemorrhage or sepsis. Moreover, the increase in rapidity, like the general

profundity of the shock, may be out of proportion to the severity of the lesion.

The interpretation of a rapid and feeble pulse is not always correctly made. For example, I once saw a case of severe abdominal pain, attended by general tenderness and a pulse of 160. The patient was thought to be neurotic and apprehensive, and, as no physical signs could be detected, no operation was performed, the consultant, a skilled gynecologist, making a diagnosis of renal colic. I saw the case with him, and failed to realize the gravity of the situation. A week or two later an experienced clinician made a diagnosis of appendicitis, from tenderness and tumor which had succeeded to the abdominal pain. I then found a symmetrical and tender tumor filling the lower abdomen, and made a diagnosis — which proved to be correct — of large ovarian tumor with twisted pedicle. The tumor was immediately removed and recovery followed.

When I see my own mistakes in such cases, — and what a serious mistake this one might have proved! — I cannot but feel impelled to emphasize them, not only as perhaps a consolation to others, but also as a plea for intervention in doubtful cases. Perhaps, however, it was fortunate that in this case operation was through a mistake deferred. Had we suspected the cause, we should have felt impelled to operate at a most critical time, when perhaps the result would have been less favorable. Delay when the patient is hovering between life and death is often quite as imperative as operation is at the beginning of the attack. Surgical intervention in the former instance will but too often turn the scale against the patient.

A pulse is not necessarily high when there is deep cardiac depression; for not infrequently the pulse is slow when the shock is extreme. The pulse is affected in quality rather than in rate. This was impressed upon me recently in the case of a woman who had been frightfully crushed in an elevator. It was impossible to determine the extent of her injuries, but a pulse of 60, even though hardly perceptible, seemed to disprove internal hemorrhage. It went later to 140. There was no internal hemorrhage, but the shock was so profound that she never rallied.

The pulse may be slightly or not at all affected in the most serious abdominal lesions. I have seen a normal pulse and temperature in a hopeless general infection. The symptoms were those of simple obstruction, and a general peritonitis seemed, in view of the normal pulse and temperature, out of the question. Operation to relieve obstruction showed a hopeless general peritonitis caused by an extravasation from the appendix. On the whole, however, the pulse is a better index of the severity of the lesion than the temperature.

The temperature may vary between extreme limits. It is often subnormal during the initial shock. A rise to normal, with falling pulse, would encourage delay for a more favorable opportunity for intervention. Fifteen-minute observations at the bedside often solve the question of intervention in those critical hours when intervention may add the last straw. A rise of temperature to normal, but not above, is characteristic of hemorrhage, especially if the pulse becomes stationary or falls. Improvement of this kind in hemorrhage indicates postponement of operation, because if hemorrhage is once checked the patient usually recovers from shock and can later undergo safely an operation, which during the shock itself might have proved fatal. The combination, however, of a temperature that does not respond to stimulants and artificial heat, with a pulse that still rises, calls for intervention in the strongest terms, for it means that the patient is bleeding to death.

Some years ago, in a paper upon abdominal hemorrhage, I took the ground that when the patient is on the verge of the grave, it is better not to operate, in the hope that she may rally. I now believe that such teaching is erroneous. When pulse and temperature indicate profound shock from hemorrhage, — when, for example, the pulse is flickering and the temperature subnormal, — when other signs confirm hemorrhage and when there is no sign of improvement, it is our duty to operate at once, after infusing salt solution under the skin, into the veins, and by rectum. Several such cases have recently occurred in my experience, with most brilliant results.

One patient, a young woman upon whom simple ovariotomy had been performed at 11 A. M., was doing well at 5 P. M. At 8 P. M. she was pale, restless, thirsty, with a pulse of 160, barely perceptible, and with temperature subnormal. There was clearly an internal hemorrhage. Salt solution was immediately injected into the veins by Dr. Jones, until I could count the pulse. When the abdomen was opened it was found filled with blood from a small spurting artery. The patient made an excellent recovery.

I will not give a detail of the deaths which I have seen from the hemorrhage of ruptured extra-uterine pregnancy, in which the pulse and temperature were so bad, and the case so hopeless, that the only chance seemed non-intervention. There have been two, and I now regret that I did not operate in every case. The argument in favor of non-intervention was based upon cases that rallied from an apparently hopeless collapse. Additional experience, and especially with the intravenous injections of salt solution, have convinced me that in hemorrhage, at least, the abdomen should be opened, even in the most desperate cases.

The value of temperature as an index of sepsis is great, but it is an index upon which too much reliance must not be placed. A rise in temperature usually means infection of some kind. The height of the temperature is no indication as to the extent and seriousness of the infection. I would rather see a temperature of 105° alone than rigidity or distention, for a small localized focus may give such a temperature without the least evidence, or, in fact, danger of general peritonitis.

Pain, with a temperature of 105° and nothing else, is a combination that often rapidly subsides; so even with tenderness and vomiting added. No intervention is permissible, unless other signs indicate it. The pain is probably a colic; the temperature an indication of intestinal absorption. Even with tenderness the indications are not clear. When tumor and rigidity are added, intervention is indicated, unless the symptoms are subsiding.

And, in fact, it should be said here that so unsuccessful are operations undertaken for many of the lesions here discussed — so serious are interventions of themselves — that, unless a lesion is clearly demonstrated, no operation should be performed when the symptoms are distinctly improving.

With reference to temperatures, little is known as to the connection between them and the causative

micro-organisms; but after watching a good many charts one can give a good guess as to the probable germ. For example, the streptococcus gives a high temperature; the colon bacillus a low one; the tubercle bacillus an eccentric and widely varying temperature. So with the milder germs — the white and yellow cocci — the temperature is moderate, though I have seen a temperature of 105° for days in cases from which pure cultures of the staphylococcus albus were obtained. Other and rarer organisms cannot even be suspected from the temperature. I have found, for instance, a temperature of 106° and 107° in cholecystitis, caused by the typhoid bacillus, when no typhoid had been suspected in the patient or had existed in the community; a varying temperature, but not an alarming one, from the diplococcus capsulatus.

(To be continued.)

FUNCTIONAL DISEASE OF THE HEART.[1]

BY HENRY JACKSON M.D., BOSTON,
Assistant Visiting Physician, Boston City Hospital.

I wish this evening to bring to the attention of the Society the consideration of some of the points in the diagnosis of functional disturbances of the heart. Such disturbances are often the source of much greater worry to the patient than organic disease. To the physician the problem always presents difficulties, and in many instances no positive diagnosis can be made. The important questions for us to consider are:

(1) What is functional disease of the heart?
(2) What are the signs and symptoms?
(3) How may the diagnosis be made?
(4) How frequent is such a disturbance of the heart?

To take up the first question, or "What is functional disease of the heart," we understand by functional disease of an organ or set of organs some disturbance of the normal physiological action of that organ whereby its action is impaired or rendered impossible. Further, we limit the use of the word functional to such disturbances as are dependent upon some cause as yet unknown, without definite pathological lesion, and, therefore, so far as we know, capable of complete restoration to health.

From a strictly pathological standpoint, we should limit the use of the term functional to disturbance of the action of the heart dependent upon faulty innervation, though clinically such a theory is scarcely tenable, as thereby it would probably be necessary to exclude the very large class of cardiac disturbances arising in anemia. I will speak later of this class of cases.

In making the differential diagnosis between organic and functional disease of the heart, it is of the utmost importance to remember that the term organic disease should not be so limited as to include only organic valvular disease; we should rather include in the class of organic disease the many and really more important cases with disease of the myocardium. The importance of this statement is realized when we consider that, from a clinical and therapeutic standpoint, chronic valvular heart disease becomes of importance to the individual only when and in so far as the muscle of the heart is affected; patients with valvular heart disease suffer when as the result of overwork the cavities become dilated and the muscle is weakened by the strain caused by overwork.

In the medical reports of the Boston City Hospital I published in 1894 a review of 92 cases seen in the Out-patient Department where the symptoms pointed essentially to the heart as the chief organ diseased; in 48 cases no valvular lesion was found as a factor in the production of the heart trouble, and these I classified as "parietal disease of the heart," using a term first employed by Dr. Gannett, considering that nomenclature more satisfactory than the more usual word "cardiac," in that it expressed the clinical picture without attempting to describe a pathological condition that could be accurately determined only by autopsy. In 39 cases there was evidently or apparently some valvular disease, and five I classified as functional.

That is to say, in 87 cases with organic disease of the heart 55 per cent. gave no clinical evidence of valvular disease; the truth of these data is fairly well substantiated by a subsequent examination that I made from the autopsy records of the hospital of 100 cases of diseased heart.

In the first series by clinical examination I made a diagnosis of valvular disease in 45 per cent. of the cases; in the second series I found by autopsy records that valvular disease was present in 40 per cent. of the cases.

Cases of anemia, with murmurs or other symptoms of functional disease, were of course not included in the five cases spoken of as functional in the first series of cases from the Out-patient Department.

In answer to the first question I should therefore say that functional disease of the heart included a class of cases in which patients complained of palpitation, rapid action of the heart or pain in the region of the heart, in which careful physical examination gave no fair reason to suspect the existence of organic disease. Exclude, if possible, organic heart disease; first and foremost in the exclusion of organic disease comes the determination that no enlargement exists. The size of the heart is to be determined by percussion; the force of the apex beat and the quality of the pulse determine whether an existing enlargement be dependent upon hypertrophy or upon dilatation. Unfortunately, physical examination cannot always exclude disease of the coronary arteries, a most important factor in the differential diagnosis between true and false angina pectoris.

I dwell especially upon the exclusion of organic disease in considering functional disease of the heart, as in looking over the literature of functional diseases I find long articles on the so-called "neuroses," including in this term "palpitation," "tachycardia," "bradycardia," and similar terms rarely used clinically, describing merely these signs or symptoms without regard to the etiology of the disturbances of action.

As it is certainly probable that many of the causes of functional disturbances of the heart may be found in the nervous system, in faulty innervation, I wish to review briefly the physiology of the heart. It has been demonstrated by physiological and anatomical experimentation that the muscular contraction of the heart may be induced independently of any nervous action, a wave of contraction being transmitted from

[1] Read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

the auricles to the ventricles; in proof of this proposition the following experiments may be cited: (1) The fetal heart beats before the development of the nervous system; (2) the excised heart and even portions of the excised heart of reptiles beat independently of any possible nerve action.

To secure the proper blood supply to various organs with varying force according to the demands of the special occasion, the heart must beat with proper rhythm, and this regularity of the force and frequency of the heart is under direct control of the nervous system.

The heart receives nerve supply from three sources, the vagus, whose action is inhibitory, the sympathetic, which is an accelerator nerve, and the ganglia in the heart itself, whose action is not definitely determined.

As a striking instance of the action of the sympathetic we may cite the rapid, often painful, and sometimes tumultuous action of the heart resulting from sudden fright, alarm, or sudden awakening from a sound sleep, and requiring a man to use at once some powerful mental effort. Such symptoms are common to us all in everyday life.

Our very definition of functional disease, namely, some disturbance of action independent of pathological lesion, shows that in the specific case we cannot absolutely determine the cause of the symptoms, but it is highly probable that in most instances there is some transitory disturbance of the innervation of the heart. As many diseases of the nervous system which were formerly considered to be functional have in recent years been shown to be the direct result of some pathological lesion, so time may teach us to understand the various phases of disturbed action of the heart, and for some at least to discover a pathological lesion.

(2) What are the signs and symptoms?

As a general rule, it may be said that a patient who complains of palpitation, of pain in the heart, and of rapid action of the heart has functional rather than organic heart disease.

In Sansom's work on the heart under the head of "Schema," practically a *résumé* of all signs and symptoms connected with the heart, are to be found the following very comforting axioms:

"Symptoms referable to the heart:

"(*a*) Pain felt by the patient in the region of the heart is rarely an index of structural disease of the organ. Organic disease may progress without any manifestation of pain. Precordial pain is often due to affections of the stomach or of the neighboring nerves. The special pain of heart origin is angina pectoris, characterized by paroxysmal recurrence, extreme distress and sense of impending death, with coldness and arrest of respiration. Pain may occur in pericarditis and in inflammatory affections of the aorta.

"(*b*) Palpitation, though a frequent symptom in heart disease, is still more common in dyspepsia and in emotional conditions.

"(*c*) Intermission and irregularity of the action of the heart felt by the patient are indications of nervous disturbance rather than organic disease."

In health we are unaware of the action of the heart and the very fact that a patient complains of the heart's action in itself shows the presence of some disturbance. The symptoms of functional disease are palpitation, pain about the heart, rapidity of action, irregularity and occasional stopping of the heart.

The signs of functional heart disease, using the word in the technical sense of symptoms that may be observed by the physician, are rapidity of the rate of the heart, irregularity in action and not rarely intermittency, the occasional dropping of a beat recognized by the patient often with as great accuracy as it is by the physician. To these symptoms may be added flushing, often followed by coldness of the extremities, with perspiration.

Pain in the region of the heart is an important and very frequent symptom; the pain is referred either to the precordia or often to the anterior part of the chest just to the left of the region of the heart. The pain may be continuous, moderate in degree, or paroxysmal, and at times of great severity, suggesting the train of symptoms associated with angina pectoris. Sensations of distress or a suggestion that some obstacle interferes with the proper beating of the heart are often more annoying and alarming to the patient than actual pain.

In distinction from the symptoms arising in organic disease of the heart, patients suffer from functional disturbance of the heart more when they are quiet, perhaps in resting after a meal, and especially at night, when their attention is more strongly drawn towards the heart. Usually the symptoms are not aggravated by moderate exercise or exertion. The heart is not incompetent, but the nerves regulating the heart are deranged.

In certain rare cases the heart beats are reduced in number, a condition found far less often than increase in the number of the beats. Austin Flint has written at length in this form of functional disturbance, at the same time warning the practitioner that it is most essential in such cases to eliminate as a causative factor all sources of direct stimulation of the vagus from cerebral pressure. So far as I can remember, I have seen but one case of slow heart in functional disturbance. An old lady complained of distress in the region of the heart with some pain and at times a sensation as if the heart were beating in the throat; her pulse and apex beat coincided, the rate being at all times about 50 to the minute. The pulse was of good strength, the heart was not enlarged, and there was no edema or disturbance of the kidney suggestive of failure in the heart's action. She was under my care for several years, and I never found her pulse to be 60 unless she took digitalis, when her symptoms were aggravated. She died suddenly as the result of a fall, and up to the time of her death had no symptoms suggestive of cerebral disease. During the time that I saw her, her constant complaint was of heart disease and a dread that she might die suddenly from some cardiac disease that she believed existed.

In this connection I would say that I believe a slow pulse is very rare as an index of weakness of the muscles of the heart. At present I have under my care a man with valvular disease and considerable dilatation of the heart who has a pulse of 50 or less beats in the minute independently of any medication. He is perfectly comfortable and has not a symptom referable to the heart so far as his sensations go.

(3) How may the diagnosis be made?

This question may be answered by what has already been said: symptoms are complained of referable to the heart, yet a careful physical examination fails to reveal any organic disease of the valves or muscular system of the heart.

(4) How frequent is such a disturbance of the heart?

Functional disturbance of the heart is certainly far more frequent than organic disease. To this statement I think we can all agree if we stop to consider how seldom we find any evidence of organic disease in the heart, compared with the number of patients who consult us for some symptoms referable to the heart either in their minds or in ours and who yet show no evidence of any organic defect. I wish to refer briefly to various classes of cases which present such symptoms, giving in each instance the treatment that I would suggest. In children just reaching puberty it is not unusual to find an occasional intermittency of the heart; in taking the pulse we note that occasionally a beat is dropped. I have seen this in boys who were to all appearance perfectly well, who showed no symptoms of any failure of the heart, and who certainly were unaware of the symptom. Such cases should be watched in case further symptoms should develop, but in my experience this has been a transitory symptom, passing off in a few years without giving rise to any disturbance. Rapidity of the heart in children I consider as much more important; I have frequently seen a pulse of 100 in young boys who had grown fast, had played hard, and perhaps had given too little time to outdoor recreation. Such children should give up confining school work, should live out of doors as much as possible, and avoid the rougher and more exacting forms of sports. These boys are helped by enforcing regular hours for meals, and what is perhaps more important, regular hours for quiet rest without interfering with the greatest possible amount of outdoor life. I have this winter seen the son of a physician; his father said that he complained of being tired after riding his bicycle and sometimes was short of breath. I found his pulse was always over 100 when I saw him, and his father reported that except in the early morning he also found the pulse the same. The boy had grown very fast, lived in the suburbs, and went to school in Boston, so that he got home too late for dinner, and played hard all the afternoon, having only a light lunch between breakfast and a late dinner. He left school for several months, studied somewhat at home, was out of doors as much as possible, and as a result improved fast, and in February returned to school, but with the reservation that he must get home at half-past one for a suitable noon dinner. In similar cases, where the rapid action of the heart has been associated with painful sensations or with palpitation, I have found that small doses of bromide, ten grains three times a day, either alone or combined with iron, was of advantage in curing the disturbance. Perhaps in dyspepsia, usually associated with and often caused by constipation, we find the largest number of cases of palpitation and allied functional disturbances of the heart. Such cases form a very large number of the young girls and women who apply for relief in the out-patient departments of hospitals. Here attention to the underlying cause usually cures the trouble; in such cases I think a small amount of bromide is essentially useful as an aid to the proper administration of a cathartic. "Pain in the heart," "palpitation," or "pain in the side," usually meaning a place between the heart and the anterior axillary line, are very common symptoms to us, and to the patient most distressing and often alarming. In chlorosis we have a frequent cause of palpitation and rapid action of the heart; these cases differ from other forms of functional disturbance in that there is shortness of breath on exertion. Practically these cases may be classed under the head of functional disturbance of the heart in that they present a condition essentially amenable to treatment, with absolute return to a state of perfect health. Recent observation has shown that in a certain proportion of cases there is some fatty degeneration of the muscle of the heart, a condition similar to, though less marked than, the fatty degeneration of the heart in severe anemia. In these cases vigorous treatment with iron, sometimes with the addition of arsenic, brings the greatest relief to symptoms and an absolute cure. Where the heart is very rapid, and especially if it is irregular, small doses of digitalis or strophanthus are of direct benefit. The last-mentioned heart stimulants probably are of service only when the muscle of the heart is sufficiently affected by the fatty degeneration as to give rise to a certain weakness of its contractile power.

In the use, or rather, let us hope, in the abuse, of various cardiac stimulants we find a frequent source of disturbance of the action of the heart — coffee, tea and tobacco. Tea and coffee or similar articles are used the world over; used, I believe, because they are stimulants. Some persons are so susceptible to their action that they cannot use these articles even in moderation. One of our prominent surgeons, an athlete of good physique, told me that he found that a single cup of coffee caused an occasional intermittency of his pulse and a sense of oppression in the chest. Many more are injured by tea and coffee because they are taken to excess, and furnishing a powerful stimulus they are made to take the place of food; in such cases the trouble arises from insufficient food plus the injurious effect of stimulation. In many individuals moderation is impossible, and when we find trouble has arisen from an excessive use of these stimulants our only alternative is to prohibit entirely tea and coffee. Dr. Minot used to say, "Tobacco, the greatest blessing given by God to man, is refused to women. Why deprive them of tea?" I have heard the Vienna physicians say they could not live if it were not for the various troubles arising from their patients' visits to curative bathing resorts, and I suppose we might venture the same assertion as to the pernicious and ever increasing "five o'clock tea." Tobacco undoubtedly is a frequent cause of disturbance of the heart, cigarette smoking especially, because it implies in many almost constant smoking.

Certain drugs in common use may in some individuals cause interference with the action of the heart. I have observed this with phenacetin and sulfonal; phenacetin I consider to be a depressant, and I hesitate to use it in persons suffering from organic disease of the heart. Sulfonal I have often used in cases with much weakness of the heart without any apparent ill effects, yet I know a perfectly healthy woman who has on several occasions complained of a sense of oppression in the chest after a small dose of sulfonal. She once said to me that she felt as if her heart "turned over and went glob-glob." I felt her pulse and found that it intermitted every few beats. This winter I saw a gentleman who was perfectly healthy; on this occasion for the first time I found his pulse markedly intermittent and at times irregular. He had taken several doses of a proprietary headache remedy

containing probably from its name a mixture of phenacetin and caffeine; the trouble was temporary.

No disease causes us such anxiety as the so-called false angina pectoris; the attacks are often terrific, accompanied by great pain, anxiety, sense of suffocation, and the fear of impending death. In false angina all the symptoms may be as severe as in true angina, dependent upon organic disease of the heart or the coronary arteries; the pulse may be rapid and the extremities cold in false as in true. Our main reliance in making the differential diagnosis must be on the frequency of the attacks in false angina, their recurrence over a long series of years, the long duration of the individual attacks, and the lack of any evidence of disturbance of the heart in the intervals between the attacks. The great difficulty in diagnosis lies in the fact that arterio-sclerosis of the coronary arteries may be present without giving rise to physical signs by which the diagnosis may be made. I once saw, in consultation, a lady with intense excruciating precordial pain, who had previously been well except for occasional attacks of what she called pain in the chest from dyspepsia. In this case a very weak, irregular and intermittent pulse ruled out false angina; three days later post-mortem examination showed arterio-sclerosis of the coronary arteries, necrosis of the heart muscle and two ruptures in the left ventricle. I had made a diagnosis of probable thrombosis of the coronary arteries; the rupture was not diagnosed, though it was probable from the post-mortem appearance that at least one of the tears occurred at the time of the first attack of precordial pain.

Another lady under my care has for twenty years had occasional attacks of severe pain in the region of the heart, the pain passing down into the left arm; her pulse is good, there are no murmurs, no enlargement and no albumin in the urine. My prognosis in this case is favorable, though necessarily guarded, as her superficial arteries are somewhat sclerotic and she is subject to attacks of true monarticular gout.

Attacks of angina may be alleviated by nitrite of amyl, nitroglycerin, Hoffman's anodyne, ice-bag to the heart; morphine may be necessary, though usually a few whiffs of ether are more efficient and less harmful. A Western lady that I once saw had frequently taken chloroform with much relief and no untoward symptoms, though I must confess that I should not have cared to administer it.

It seems to me highly probable that time will show us some pathological cause for the so-called false angina, as already the discovery of the connection of this trouble with disease of the coronary arteries has removed a considerable number of cases from the domain of functional diseases.

Graves's disease, exophthalmic goitre, furnishes us with a beautiful example of rapid action of the heart directly dependent upon some disturbance in the functional activity of the sympathetic nerve. Rapidity of the heart and palpitation are the two most prominent symptoms so far as the patient goes. Digitalis is well-nigh useless in this disease, belladonna, bromides and the phosphate of sodium being probably the three drugs that afford the most relief.

In this brief summary of the subject in hand I have tried to point out the important elements in the diagnosis of functional diseases of the heart and to mention some of the most common causes of such a disturbance.

THE RESPONSIBILITY OF THE ATTENDING PHYSICIAN WHEN A WILL IS MADE.[1]

BY ARTHUR C. JELLY, M.D., BOSTON.

The responsibility of the attending physician when a sick person transfers property was forced upon me about a year ago in a case where death was due to heart disease, and again recently where alcohol was the probable cause of death.

In the first instance there came, with failing compensation, periods of great mental confusion when the man failed to recognize the familiar surroundings of his home, and believed that his wife and children had taken him to a lonely farmhouse, intending to abandon him there. This condition varied in duration, and alternated irregularly with periods when he was perfectly clear. During this time a sister came to help the wife take care of him. He looked to her for protection when the confused state of mind came on, and he often exacted the promise that she would stay with him till death and would see that he was properly buried.

After his death, his wife learned that he had given the sister an order for all the money he had in the bank, and that she had drawn it out. The wife, whose devotion had been unflagging, felt that this act was done at a time when he was confused and therefore not responsible; accordingly she demanded the money. But the sister was sure that he was mentally clear, and that he intended simply to show his appreciation of her care. At this point I was asked whether in case of a suit to recover the money I could testify positively about him. But as I had not made any visit on that day, I had no record of his mental condition at the time of the gift, and I was therefore unable to be of service to them. So many questions were asked in the discussion of the matter that I felt the need of more knowledge in regard to the position of the physician in attendance upon such cases. Accordingly, I consulted text-books upon wills written by lawyers (from which I shall quote freely without giving references) as well as the more familiar writings of doctors upon testamentary capacity.

Wills are contested on one or more of the following points: (1) He did not understand that the paper he signed was a will; (2) he was not of sound mind; (3) he was the victim of fraud and undue influence.

To protect all parties, and to ensure the just and proper distribution of the estate, the statutes make certain steps necessary. The Massachusetts statute reads as follows:

"Every person of full age and sound mind may, by his last will, in writing signed by him or by some person in his presence and by his express direction, and attested and subscribed in his presence by three or more competent witnesses, dispose of his estate real and personal, etc."

An attestation clause is desirable but not essential. The following is an example of such a clause:

"Signed, sealed, published and declared by the said A. B. as and for his last will and testament, in the presence of us who at his request and in his presence and in the presence of each other have subscribed our names as witnesses hereto."

If due care is given to these precautions, it is clear that the will cannot be contested on the ground that the man did not know it was his will.

[1] Read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

Where fraud and undue influence are charged, the question is, had he sufficient intelligence to detect the fraud or strength of will to resist the influences brought to bear upon him. Undue influence is defined as "that which compels a man to do what is against his own desires through fear or a desire to be let alone, or some feeling which he cannot exactly describe but which he cannot resist." Fraud and undue influence necessarily imply an enfeebled mind, and usually it is claimed that the mind was unsound to such a degree that the man was not capable of making a will.

What capacity, then, is required for making a will? The standard is naturally very different from that in criminal cases, where tests of responsibility are applied, and where a very great departure from sanity is required to excuse from punishment for crime. Whether a man is able to make contracts or to transact ordinary business is a proper subject for investigation, because if he can do these things properly it may be safely inferred that he has sufficient capacity to make a will. On the other hand, inability to manage property or to maintain former business habits does not necessarily establish lack of capacity to make a will, because his property and his relations are familiar subjects, and may have been under consideration many times with reference to this act. Moreover, persons under guardianship and inmates of asylums have made wills that have been admitted to probate. Body and mind may both be so weak that action seems almost impossible, till by a tremendous effort the forces are rallied and a sound will is made. Eccentricity is not necessarily insanity, though eccentricity taken with other symptoms and signs may show such a change of character as to prove insanity.

The will itself should be thoroughly examined; unjust and foolish wills are viewed with suspicion, but a wise and just will may bear evidence to a sound condition of mind.

At the outset the presumption is that the testator was sane; therefore proof of insanity must be introduced by the contestant to invalidate the will. On the other hand, if insanity was known to have existed previous to the will, the burden of proof shifts to the executor to show that the disease has ceased or did not affect the disposition of the property.

Proof of the effect of alcohol, of fraud and undue influence must be established by those who contest the will.

In general, it has been held that to make a sound will a person should be able without prompting to recall the kind and extent of the property to be willed, the persons to whom he would naturally give it, and he must recognize clearly the nature of the claim of any one whom he excludes.

Of all the forms of mental weakness which are likely to lead to questions of capacity, senile dementia is "the most important and the most difficult." As Schouler has indicated, the infirmity is often more apparent than real. Persons who pay little heed to their surroundings, who forget names and dates and recent events, who fall into slovenly habits and acquire bad manners, may yet be found perfectly clear as to their property and as to the disposition they wish to make of it.

States of mind following apoplexy have given rise to difficulties in court. Great caution should be exercised, especially where aphasia and paralysis of the right hand exist, to determine beyond any possible doubt what are the wishes of the testator.

In these two groups the testimony of a familiar attendant is of greater value than that of an ordinary person, and that of the attending physician may be more valuable than either, because he is a trained observer and may be supposed to be unprejudiced.

In the older books the term "monomania," or partial insanity, appears frequently, and much space is devoted to the discussion of the relation of delusion to mental capacity. Delusion has been defined as "a diseased state of mind in which persons believe things to exist which exist only, or to the degree they are conceived of only, in their own imaginations, with the persuasion so fixed and firm that neither evidence nor argument can convince them to the contrary." The presence of a delusion proves that the mind is affected in one of its most important faculties — its power of reasoning. The delusion may cause a disturbance of the feelings and an alteration of the affections; or the feelings may be altered as a part of the disease of the mind, without being directly connected with the delusion.

It will thus be seen that difficult questions arise in cases where delusion exists. In general, the view prevails that the question to be settled is whether the delusion determined the disposition of the property. The burden of proof is on the executor to show that the disease did not influence the will.

Alcoholism has been the basis of numerous contests. Of course, a man could not be supposed to make a will during an attack of delirium tremens. Long-continued, excessive drinking leads to a weak condition of mind in which fraud and undue influence may easily be effectively used. But the burden of proof is on the contestant to show that intoxication was present at the time to such a degree as to vitiate the disposition. This is not a question for experts, but depends upon the observation of ordinary witnesses. Where, as the consequence of alcohol, there is habitual and fixed derangement of the reason, proof of a lucid interval would generally be needful.

Considerable stress has been laid in these cases upon the character of the will. The term "lucid interval" has been defined as "an interval in which the mind having thrown off its disease has recovered its general habit." It is more than a remission. "It is favorable to the supposition of a lucid interval if the will appears a rational act done calmly without persuasion or influence."

The Cartwright case is famous. A woman had been insane in early life and recovered. Later she was subject to paroxysms of excitement, when she was so violent and destructive that at times she was restrained by camisole or other mechanical devices. Once when excited and in restraint she demanded writing materials, and wrote calmly and carefully, in a room alone, a very just will, which was sustained. On the other hand, if a person supposed to be insane makes a will which appears to be unnatural, it will be presumed to be the offspring of his disease.

The question of a lucid interval comes up very naturally in cases of epilepsy, where a great variety of mental states occurs between convulsions. And this is a question that may confront the doctor in cases of febrile disease, or profound toxic conditions, or accidents where delirium or unconsciousness has been present. To establish the lucid interval one must

prove that the mind has been restored. Note carefully, therefore, the disappearance of excitement or confusion or evidence of delusion, and the return of natural feelings and ideas. Having these data you are fortified if called into court.

Though wills are usually made at a time when death seems remote, it frequently happens, as a result of sudden illness or accident, that a will is not made till death seems at hand. At such a time the presence of the doctor and the confidence reposed in him lead naturally to the request that he sign as one of the subscribing witnesses. And often the doctor signs without hesitation, just as he would witness a man's signature to any document. I was surprised to learn that courts have ruled that a doctor signing a will as a subscribing witness virtually registers his professional opinion that the man was of sound mind, and that judges have held that greater weight should be attached to the opinion of the attending physician than to the opinion of experts called into the case in court, because "his opinion is founded upon personal observation of facts and circumstances which carry their own inference." The statement by the doctor that he did not investigate the mental condition places him in an embarrassing position if mental incapacity is shown by evidence of others. And if he signed when aware that the patient was not in possession of his faculties, a learned judge has said "it is very much as if he had subscribed to a will that he knew was a forgery."

If asked to sanction the execution of a will, or to sign as a witness to it, the doctor may therefore properly decline, if he has any doubt about the patient's capacity, unless opportunity is afforded for a satisfactory examination of the patient and of the will itself. If such examination is refused, it is clear from the views just quoted that he would better be out of the case when the will is presented for probate. If his refusal seems likely to be misunderstood, the doctor should explain the delicacy of his position, on account of the weight attached to his testimony by the judges. Moreover, it seems probable that the testator would assent to an examination, if the idea were suggested to him that only in this way could he secure the firm support of the doctor's testimony, and thus strengthen very much the probability of having the will sustained in case of any contest.

A STUDY OF FOURTEEN HIP ABSCESSES.[1]

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

I WISH to report a number of hip abscesses, which shall conform to a certain type as nearly as possible, so that a description of one may suffice for all.

These abscesses usually form about the outer or anterior surface of the thigh, resulting directly from the tubercular process. Upon being opened it may be possible in a small number to go directly to necrosed bone, either about the neck of the femur or at some contiguous point upon the acetabulum. In another class the pus sac is circumscribed and no denuded bone is found, although the mouth of a very small sinus may or may not be discovered. It is this latter class of abscesses with which the paper deals. The treatment in each case has been much the same, that is, opening by an incision the full length of the abscess cavity, thoroughly curetting, closing without drainage, the application of a (not too bulky) surgical dressing and a compression bandage. The patient has been kept in bed on a Bradford frame with extension until absolutely certain that healing was solid and the abscess cavity obliterated or until it was demonstrated that such a result was impossible.

[1] Read before the Providence Clinical Club, May 24, 1899.

CASE I. J. O'B., a boy of four years of age. A right hip disease had existed for one year when an abscess developed on outer surface of thigh. This was opened during the winter of 1891–1892, curetted and closed. At the end of two weeks there was primary union, with complete obliteration of cavity and patient was gotten up on splint. The splint was omitted against advice about the middle of the third year of the disease and some flexion resulted. Everything went all right until about the middle of the fourth year, when another abscess developed, which the mother refused to have operated. This opened spontaneously and there still exists a discharging sinus. There is complete anchylosis of joint and 25° or 30° permanent flexion.

CASE II. W. W., a boy of seven years of age. A right hip disease had existed for several years and an abscess had been opened before coming under my care. April 28, 1897, there was a circumscribed abscess of several weeks' duration and the disease had continued for about five years. The abscess was, on above date, curetted, closed without drainage, and a compression bandage applied. The patient was in bed six weeks, when, everything being firm and solid, he was gotten up on a splint and high sole and sent home into the country (July 2, 1897).

In the early spring of 1898, being in apparently perfect condition, and weight having been allowed on the foot for four or five months, the splint was entirely omitted, it being about the sixth year of the disease.

A few months later, in the summer of 1898, the patient returned to the hospital with an abscess which opened spontaneously and exploration revealed extensive disease in femur and acetabulum. This was thoroughly curetted and boy is now home again wearing the usual apparatus. There is a discharging sinus, but patient is in excellent condition.

CASE III. A. R. C., a girl of seven years of age. Duration of left hip disease about two years, and an abscess had been present for several weeks. Operation December 20, 1894. This was the most extensive abscess of the series as regards the area involved, and the incision extended from the crest of the ilium nearly to the knee-joint. This enormous area was thoroughly curetted and it was possible here to feel the mouth of a very small sinus, which was supposed to communicate with the focus of disease. The usual course was pursued, of complete closure without drainage, a moderate surgical dressing with compression bandage. This bandage was readjusted from time to time to keep up the compression, but the dressing was not disturbed for two weeks, when the stitches were removed, and the very next day the patient was up with splint applied. There never has been any return of the abscess. The treatment was discontinued one year later and the patient to-day is in perfect health, with about one and three-quarters inches shortening.

CASE IV. E. H., a boy of five years of age, came under observation in 1895. He had double hip dis-

ease, and in October, 1895, an abscess developed about the right hip. This was opened October 30th and an abscess on the left hip was opened December 4, 1895. These both united, with obliteration of abscess cavities.

October 26, 1896, about eleven months after last operation, a small sinus began to discharge from the right hip. This continued for three or four months, then closed, and has remained closed ever since.

June 1, 1897, about one and one-half years after operation, a small sinus appeared on left hip, and remained open about three or four months, when it closed permanently. There is at present complete anchylosis of both hips and permanent flexion of about 40°. Physical condition excellent.

I would say that the treatment of this case was unsatisfactory, as a portion of the time he was under the care of an irregular practitioner who treated by the "laying on of hands" over the hips outside of the trousers. This may account for the opening of the sinuses.

CASE V. J. R., a boy of three years. An abscess developed in this case in the second year of a right hip disease. This was opened and curetted on November 10, 1895. The cavity was a large one, nearly encircling the femur. It was closed as usual, but a small sinus at the lower angle of the wound discharged for about a week, when it closed permanently. This must have been entirely superficial to have subsided in so short a time. This boy was under no control at home, but did fairly well on his splint until December, 1898, just three years later, when another abscess developed. This was opened but the wound became infected in some way and drainage became imperative.

CASE VI. E. P., a girl of eight years of age. In 1897 this patient was convalescing from a right hip disease, when the left hip became involved, and in December, after the disease had been present about six months, an abscess developed. This was operated December 22, 1897. Healing with complete obliteration of the cavity was obtained, and patient was discharged February 14, 1898. About five months after operation patient died with tubercular meningitis. I saw the girl the day before death. The hip was in good condition, and there was no refilling of the abscess.

CASE VII. L. M., a girl of four years of age. Duration of left hip disease about one year, when abscess developed.

Operation, February 23, 1898. About three ounces of pus evacuated. Wound closed as usual, with compression bandage applied. Patient was in bed a little over three months on account of some irritation about the wound, but at that time (June 1, 1898) everything was solid, there was no refilling, and there has been none since. Patient still under treatment.

CASE VIII. A. M., a girl of four years of age. Duration of a right hip disease six months. Abscess operated March 9, 1898, and four ounces of pus evacuated. Here a slight sinus remained until February 16, 1899 (nearly one year), when it finally closed permanently. Patient still under treatment.

CASE IX. A. L., a boy of eight years of age. A left hip disease of two years, seven months' duration. Abscess operated on April 1, 1893. There were two sacs, and two incisions were necessary to thoroughly reach both of them, one on the outer aspect of the thigh and the other on the anterior surface. Several ounces of pus were evacuated, the wound closed without drainage, and a compression bandage applied. There was a small stitch abscess after the operation, which was curetted, and the patient left the hospital August 8, 1898, in excellent condition. Patient still under treatment and no refilling of abscess.

CASE X. W. C., a boy of ten years of age. Duration of left hip disease at time of operation two years. Abscess operated latter part of March, 1897, with immediate healing, but the mother took child home "against advice," and splint and incessant activity irritated the hip and caused a sinus to open one month later. This discharged a small amount for six months, when it remained closed. November, 1897, six months later, another abscess developed and opened spontaneously and is still discharging. Patient in good physical condition.

CASE XI. L. P., a girl of four years of age. Duration of right hip disease four months. Abscess operated October 1, 1898. The usual operation, without drainage. This did not heal and child has emaciated and developed tuberculosis in both ankles and is having a serious time of it. Still under treatment on a Bradford frame with extension.

CASE XII. J. McM., a boy of seven or eight years, with a left hip disease of two years' duration. This abscess had been slowly filling for two months or more and the mother refused operation until an enormous tumor (size of a child's head), had formed on the anterior surface of the thigh. The skin did not redden and there was no tendency towards a spontaneous opening, notwithstanding the great amount of distention. This was opened May 24, 1898, and an elliptical piece of skin was removed en-

		Male.	Female.	Hip. Right.	Hip. Left.	Duration of hip disease at time of abscess.	Time in bed.	Second abscess.	Sinus developed.	Duration of sinus.	Non-closure with immediate sinus.	Dead.
1	J. O'B.	1		1		1 yr.	2 wks.	3½ yrs. later.				
2	W. W.	1		1		5 yrs.	6 wks.	1 yr. later.				
3	A. R. C.		1		1	2 yrs.	2 wks.	None.				
4	E. H.	1		1		mos. ?	?	None.	11 mos. later.	3-4 mos.		
5	E. H.	1			1	mos. ?	?	None.	1½ yrs. later.	3-4 mos.		
6	J. R.	1		1		2 yrs.	?	3 yrs. later.				
7	E. P.		1		1	6 mos.	?	None.				5 mos. after operation.
8	L. M.		1		1	1 yr.	3 mos.	None.				
9	A. M.		1	1		6 mos.	?				Sinus remained open for 1 yr.	
10	A. L.	1			1	2 yrs., 7 mos.	4 mos.	None.				
11	W. C.	1			1	2 yrs.	?	1 yr. later.	1 mo.	6 mos.		
12	L. P.		1	1		4 mos.	?				Still remains open.	
13	J. McM.	1			1	2 yrs.	1 mo.	None.				
14	T. G.	1		1		2 yrs., 3 mos.	1 mo.	None.				

tire so that when it collapsed the edges of the wound would just come in apposition. More than a quart of pus was evacuated. This boy remained in bed just one month, when he was gotten up on a hip splint and there never has been any return of the abscess, now over a year after operation.

Case XIII. T. G., a boy of six years of age. Duration of right hip disease two years and three months. An abscess had been slowly developing for eight or nine weeks. The usual operation was done February 23, 1899. Patient was in bed one month, at the expiration of which he was discharged with the abscess cavity completely obliterated. This case was seen May 20th, when it was in excellent condition, with no sign of refilling.

In order to obtain the results here reported it has been necessary to attend to certain details which will be particularly mentioned. In the first place, we are told that a certain number of abscesses would be absorbed if let alone. With the exception of two or three, all of these abscesses were let alone, with the absorption idea in mind, but they all progressed steadily and the skin began to show signs of spontaneous rupture before operation was decided upon. The one notable exception (Case XII) has already been mentioned.

Sufficient time must have elapsed for the formation of pus to have ceased. If an abscess is closed after operation and pus continues to form, it must collect somewhere and the inevitable result will be a refilling of the cavity, or the formation of a sinus through which it may be discharged; therefore it would seem to have been established clinically in the majority of these cases that the period of pus formation is limited, and if the abscess is not opened until after this period the chances are all in favor of complete and permanent obliteration of the cavity.

In opening an abscess the incision has always been nearly if not quite as long as the cavity, in order that every portion might be thoroughly cleaned, and in one case (Case IX) a double incision was necessary to expose completely the two sacs.

After closing the operation wound and adjusting a surgical dressing, a compression spica bandage is placed over all. This compression is necessary to keep the walls of the abscess in perfect apposition. The bandage must be tightly applied and the leg elevated, for in every case the return circulation is somewhat interfered with. Some of the children have complained of pain and discomfort the first day on account of the tightness, but the bandage has never been loosened and a mild opiate has been given a number of times rather than interfere. The bandage loosens very quickly and has to be readjusted every few days in order to keep up the compression a sufficient length of time.

From the third to the fifth day there may be a slight elevation of temperature, in which case the dressing is removed and a small probe inserted at the lower angle of the wound, when a considerable quantity of bloody serum will escape, in some cases as much as a half ounce. The dressing and compression bandage is then reapplied. This is extremely important, as this serum might very well change to pus, or even if not, it would separate the abscess walls, thus preventing complete obliteration and in all probability resulting in a sinus. This is of so much importance that even if there is no temperature the wound is examined with the probe in three or four days anyway.

The child is kept in bed until all irritation which may be present from the stitches or from any cause has subsided, no matter how long it may take, as in Case VII over three months were necessary to accomplish it.

Summary. — There were 14 abscesses in all. Of these, two refused to close at all, and one opened one month after operation, making three open after operation.

Of the 11 cases remaining, the boy with double hip abscesses had a sinus develop in right hip eleven months after operation and in the left hip one and one-half years after operation, each open only three or four months, remaining perfectly solid ever since.

In the remaining nine cases, one had another abscess three and one-half years later, one three years later, and one one year later. One case died five months after operation.

Clinical Department.

EXAMINATION OF DIGESTIVE CASES.[1]

BY M. P. SMITHWICK, M.D., BOSTON.

In digestive cases accurate diagnosis based on symptoms is, as a rule, impossible. A careful examination of the stomach contents in these cases will convince anybody of the truth of this statement.

Case I. December 11, 1898, a servant girl, twenty-two years of age, entered the Boston City Hospital in the service of Dr. Francis H. Williams.

Past history. — Six years ago pains in epigastrium with vomiting; no blood. Fainted. Menstruation always regular, and usually lasts three days.

Present illness. — During past week considerable pain in epigastrium and across upper abdominal region, increased by food and by pressure. Has vomited once or twice daily about one or two hours after eating. Three days ago vomited immediately after eating, had pain in epigastrium and fainted. Two days ago commenced to menstruate but stopped abruptly after a few hours. In the afternoon vomited blood and fainted. The attending physician told patient that there was a quart of blood. Two chills after recovering consciousness. For three weeks cough without expectoration. No dejection for three days and no blood noticed previously. For two days headache, vertigo, tinnitus aurium, blurred vision, weakness and sleeplessness; temperature 100.2°; pulse 120; respiration 22. Physical examination negative except for anemia. On day of entrance a liquid black dejection considered to be blood.

December 13th. Erythrocytes, 2,000,000; leucocytes, 4,400; hemoglobin, 20 per cent.

December 15th. Vomited blood.

December 17th. Vomited large amount of dark clotted blood twice.

January 4th. Still complains of slight abdominal pain.

January 28th. Chair and blankets.

January 17th. Reds, 4,128,000; whites, 4,400; hemoglobin, 45 per cent.

[1] An abstract of this paper was read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

February 1st. Reds, 4,320,000.

February 6th. An analysis of stomach contents an hour after an Ewald test meal showed: Amount, 70 c. c.; free HCl, 0.2044 per cent.; total acidity, 0.3066 per cent.; sediment, no blood nor blood pigment; 25 c. c. of filtered gastric juice digested 0.052 gramme of coagulated egg albumin in less than three hours, at 37.5° C.

February 12th. X-ray examination of chest showed nothing abnormal.

February 16th. Discharged well.

Two months after this examination, she complains that for two weeks there has been sharp pain in her epigastrium after eating, the pain going through to the back. She is constipated. She fears a repetition of the last attack.

This is a digestive case in which past history would seem to count and in which one might be tempted to make a snap diagnosis of gastric ulcer.

An examination showed: Amount contents, 75 c. c.; color not suggestive of blood; microscopic examination, no blood; free HCl, 0.0913 per cent.; total acidity, 0.2373 per cent.; digestion, four and one-half hours plus.

Exclusively milk diet. One week later patient had no distress after eating, and without instruction had increased her diet. An analysis showed little change from the last, except a moderate increase in the free acid and a reduction of the digestive period to nearly three hours. Five days later the girl felt able to resume her work as a domestic and insisted on doing so.

So far as analysis can determine, here is a clear case of gastritis, where from the history and symptoms alone a positive diagnosis of ulcer would have been made. Whether such cases are simple gastritis, or whether they are the beginning of what later, if untreated, would show the typical signs of ulcer, must be determined by further observation.

Case II. One year ago I was consulted by a healthy looking gentleman, a writer of stories of adventure, who for ten years had suffered with a gnawing pain in the epigastrium, coming on about three o'clock each morning and lasting about four hours. The past history stamped him as a neurotic. He was convinced that he had a serious stomach trouble and that his kidneys were somewhat affected, because he had it on high authority, which he declined to reveal. He believed that he was unable to digest starches and was accustomed to dieting. Food had no effect on the pain.

The examination, including that of the urine, was negative. Pupillary reflexes normal, knee-jerks slightly exaggerated. The stomach was normal in size and position. The stomach contents after an Ewald test meal were normal in amount and constituents, the microscopic examination showing no remains of the dinner of the previous evening. The salol test for motility showed reaction at one hour and no reaction at twenty-four hours.

I assured him that he was sound, that he could stop the pain if he wished, and that he was in imminent danger of becoming a crank. He asked what he might eat. To my remark that he could doubtless digest a boiled dinner when happy better than peptonized milk when sad, he exclaimed: "You are right. The only time when I've been free from the pain is when I have been out the previous evening with congenial companions, and perhaps enjoying a Welsh rarebit and a glass of beer." He was directed to eat everything he liked regardless of consequences, but to masticate carefully. He was warned against eating while physically tired or exercising immediately after meals. He was especially urged to lay aside business and troubles at meal time. He promised me not to get angry for a month and to give up literary work for that time.

Thinking that defective motor power might be the cause, in spite of the negative salol test, nux vomica was taken before meals and a glass of wine or beer with lunch and dinner but soon the nux was changed to bromide, as it increased his nervous irritability. The stimulant was not taken regularly. At the end of two weeks he had been free from pain about half the time and he had no pain the following two weeks. While some special nervous excitement will occasionally be followed by an uncomfortable morning, the symptom has been gone essentially one year. He believes that he is sound, and that the cure rests with himself. My patient has just returned from a six hundred mile tramp through Cuba and reports his general health and digestion perfect.

Whether or no his mental and nervous condition was inhibiting digestion, the cure lay in establishing a nervous equilibrium and not in dieting and drugging.

This case is typical of a great class of neurotics who can be returned to comfort and usefulness if one can convince them that they are not diseased.

The analysis in cases of chronic gastritis frequently furnishes surprises. The symptoms may be quite vague and unsuggestive. I will give briefly the first analysis in such a case.

Case III. A hostler, thirty years of age, has been employed in a brewery three years. During that time, while considered abstemious by his fellows, has drunk beer quite freely. One hot day in July, 1897, after drinking considerable beer and ice-water, diarrhea commenced and lasted until the following March. Never passed blood. Since that time he has never been free from diarrhea longer than two or three months at a time. Usually has two or three loose dejections a day. Never much distress after meals, but much gas in stomach and bowels. Stomach feels weak when diarrhea is present. Appetite usually good. Nausea and vomiting immediately after meals quite frequently during the summer of 1897; not at all in 1898. Recently ate boiled dinner and vomited the cabbage a day later. One evening, more recently, he ate soft-boiled eggs and vomited them the following morning. No other illness. Twenty-five pounds under weight. Physical examination negative, including size and position of stomach.

One hour after the test meal: Amount 52 c. c.; bile-tinged, not much mucus; faintly acid to litmus; free HCl, absent; biuret, present; lactic acid, present; filtrate, achroödextrin. Twenty-five c. c. of filtered gastric juice, with 0.16 per cent. free HCl added, completed the digestive test in twelve hours.

Microscopically. — Few striated muscle fibres (eaten nineteen hours previously), no gastric epithelium seen; no blood; smear stained with methyl blue, contained sarcinæ in moderate numbers.

Two days later, after a thorough washing of the stomach, the results of a test differed only in the practical absence of lactic acid. The total acidity (in

terms of HCl), was 0.037 per cent. Until my analysis, his treatment had consisted solely of diarrhea mixtures. He was directed to take milk, raw eggs, mashed potato, cereals and toast. Seventy drops of dilute hydrochloric acid and two teaspoonfuls of Fairchild's essence of pepsin were to be taken after meals, and repeated in one-half hour. By mistake he took only 60 drops of acid and one teaspoonful of pepsin to a dose.

In six weeks he reported a gain of more than seven pounds. His stomach felt "strong," very little gas. Took treatment for three weeks and then reduced the acid and pepsin one-half, as he was having but one natural dejection a day and feared lest the medicine constipate. Omitted treatment after five weeks. Had eaten meat twice a day after the tenth day. Three meals and two or three extra meals a day. Has averaged four dozen raw eggs a week in the extra meals.

One and one-fourth hours after a test meal of 30 grammes of bread and 300 c. c. of water, amount of contents 51 c. c. Appearance not remarkable. Slightly acid to litmus. Free HCl absent; total acidity, 0.0511 per cent.; lactic acid absent; biuret — good reaction; filtrate — achroödextrin; digestive test, seven hours. Treatment resumed.

A rational examination should determine: (1) The motor power of the stomach; (2) size and position of the stomach; (3) acidity of the gastric juice; (4) amount of pepsin; (5) constituents of the sediment; (6) starch digestion.

It is our custom to remove the gastric contents one hour after an Ewald test meal, consisting of 35 grammes of wheat bread and 300 c. c. of water. If one desires to make systematic examination of such cases he must avoid arousing their apprehension and at the same time he must have exact technique. We will suppose that a patient presents himself at the afternoon office hour. His history is then taken, a general examination made, including the reflexes, the heart, lungs, the urine, and position of the various organs. The stomach is inflated with carbonic-acid gas, as it is desirable to know its position before passing the tube, and a diagram kept. Patient is directed to eat nothing after 6 P. M., to drink nothing after retiring and to come early the following morning, when he is given the test meal. Usually the 300 c. c. of water gives a line of flatness indicating the lower border of the stomach. It is well to take advantage of this aid, especially if the previous distention with CO_2 has been omitted. We prefer to use a very soft rubber tube with a bulb. This is shown to patient, the sensations experienced in its passage explained and the patient advised to restrain the impulse to vomit or grasp the tube. Patient leans forward and tube is introduced over base of tongue and pushed steadily onward, while he is encouraged to breathe regularly and occasionally to swallow. When the tube should have reached the contents, siphonage is started by exhausting the air by means of the bulb. Care is taken to exclude saliva and vomitus from the specimen to be examined. When no more can be removed by changing the level of the tube and continuing the exhaustion of air, a measured amount of water is introduced, siphoned out, and measured. This is repeated. If the same amount is recovered, we assume the stomach to be empty. If more or less is recovered, the maneuvre is repeated. Enough water is then poured in to give a sense of moderate distention, and the area of flatness ascertained by percussion, patient standing, and outlined with a pencil. It is then siphoned out and the area again percussed, when the flatness of course should be replaced by tympany. It is well then to inflate the stomach with air through the tube by means of a Davidson syringe or Politzer bag, patient reclining, and confirm the previous diagram for future reference. The contents are then measured, and from the amount we can roughly estimate the motor power of the stomach. An average amount is 70 c. c. Unless motor power is diminished we seldom get much over 100 c. c. Both in diagnosis and treatment we may be aided by a chemical and microscopic examination of the contents of the fasting stomach in the morning.

The following reagents are needed: (1) A decinormal NAOH or KOH solution and a burette and stand; (2) saturated alcoholic solution of 00 tropeolin, gives purple with free HCl; (3) half-per-cent alcoholic solution of dimethyl-amido-azo-benzol (Töpfer's reagent) gives carmine red with free HCl; (4) one-per-cent. alcoholic solution of phenolphtalein gives red with acids free or combined; (5) five-per-cent. aqueous solution of ferric chloride; (7) sulphuric ether; (8) strong hydrochloric acid; (9) glacial acetic acid; (10) weak solution of copper sulphate (Fehling's copper solution diluted will do); (11) ammonium hydrate.

While the gastric juice is filtering we note macroscopic and microscopic appearance of sediment. Test reaction of contents to litmus paper. Test for free HCl with tropeolin as described later. If free HCl is present, to five c. c. or 10 c. c. of filtrate in test tube, add a drop of Töpfer's reagent. A carmine red color appears. Add the decinormal KOH solution from the burette gradually, shaking after each addition. Before the red changes to yellow, heat together in a porcelain dish a drop of contents and one of tropeolin solution. Continue this after each addition of KOH solution, and when tropeolin ceases to give a reaction, free HCl is neutralized.

Suppose two c. c. of decinormal KOH solution had been added to the five c. c. of contents before the drop was added that destroyed the reaction of tropeolin. Then to same specimen add a drop of phenolphtalein solution and continue adding decinormal KOH solution until the red will not deepen. The last reading before the color ceased to deepen was the end reaction.

Suppose that in all three c. c. of KOH solution was added to the five c. c. of contents. Free HCl = 0.00365 x 2 x 10 x 2 = 0.1460 per cent.; total acidity = 0.00365 x 3 x 10 x 2 = 0.2190 per cent.; one c. c. of decinormal potassium-hydrate solution will neutralize 0.00365 gramme of hydrochloric acid, 0.00365 x 2 x 2 = number of grammes of free hydrochloric acid in 10 c. c. of contents. This multiplied by 10 = grammes of free hydrochloric acid in 100 c. c. of contents, or the per cent. A quicker, though less accurate method — especially when organic acids are present — is to omit the tropeolin. Töpfer's reagent and phenolphtalein can then be added at the same time, as their end reactions are separated by an interval.

If free HCl is absent we estimate the total acidity as before, and in addition try the biuret reaction as follows: To a few cubic centimetres of filtrate add ammonium-hydrate solution to slight excess and then two-per-cent. solution of copper sulphate, drop by drop. A reddish violet indicates the presence of albumoses or

peptones and shows peptic activity. In the absence of a large amount of lactic acid we may assume that some HCl has been secreted. If free HCl is absent and the biuret reaction obtained, we should soak in water some of the bread used for the test meal and test the filtrate for the biuret reaction before assuming peptic activity.

Lactic acid. — To five c. c. of filtered gastric juice in test-tube, add two drops of concentrated HCl. Boil down to a syrup over flame, cool and shake with ten c. c. of ether. Decant the ether and to it add five c. c. of water and one drop of the ferric-chloride solution. Lactic acid gives a lemon-yellow color.

Starch digestion. — To ascertain the progress of starch digestion, one or two drops of Lugol's solution are added to a few cubic centimetres of filtered gastric juice. A blue color indicates starch, a violet or mahogany-brown indicates erythrodextrin, while achroödextrin gives no color other than that of the diluted reagent. Wheat starch shows concentric rings under the microscope. The disappearance of these and disintegration of the grains also show progress in starch digestion.

Microscopic examination. — One should be familiar with the microscopic appearance of wheat bread soaked in water, of the same after being subjected to normal gastric digestion, and of the sediment of a mixed meal after four hours' digestion. To one familiar with these pictures, much information is gained from examination of the sediment alone. While this information is usually simply confirmatory of that gained by other tests, meat fibres or other remains of previous meals found in the sediment from an Ewald meal may be the first definite proof that a stomach fails to empty itself completely. This should be a part of the routine examination and its value can be learned best by experience.

Some are content to base diagnoses on tests for free hydrochloric and lactic acids. Others go a step further and quantitate for free HCl and total acidity. Either method would have been insufficient in the second analysis of Case I, and in Case III, according to Simon, the digestive test is essential for a differential between neurosis and chronic gastritis. We have seen cases of hyperchlorhydria in which at the first examination free HCl and total acidity were normal owing to acute gastric catarrh. A digestive test explained the complication. A quantitative estimation of the acidity is necessary to distinguish certain cases of hyperesthesia from hyperchlorhydria. Still, these imperfect schemes are better than none.

To illustrate the value of the digestive test, I will report briefly a case of gastric catarrh in a nervous woman.

CASE IV. Cigar-stamper, forty years of age, unmarried, subject to "bilious" attacks until two years ago, consisting of drowsiness, vertigo and vomiting of bile. For one and one-half years, when stomach was out of order, too free indulgence in food, or some especially indigestible article, would cause chills. Some indigestion at times for two years, causing sense of distension after meals, and occasional regurgitation of sour fluid. No pain. Much nausea for three months, especially in the morning. No vomiting. Disagreeable taste in mouth and tongue heavily coated. Recently bulimia has alternated with anorexia. Very constipated, irritable, no liquor. Wears suitable glasses. Physical examination negative.

An analysis was made the following day, one hour after Ewald test meal: Amount contents, 90 c. c., considerable mucus; free HCl, 0.064 per cent; total acidity, 0.263 per cent.; lactic acid, strong reaction; filtrate, erythrodextrin. The digestive test was completed in nine hours at 37½° C.

Six weeks later a second analysis was made, chiefly to learn if further treatment were necessary, as the symptoms had disappeared: One hour after the test meal, free HCl, 0.065 per cent.; total acidity, 0.219 per cent. Digestive test was completed in three and one-third hours at 40° C. In these nervous cases especially, the digestive test makes us more independent of subjective symptoms in estimating improvement.

Test meals. — If examination of the gastric juice one hour after Ewald's test meal shows a normal amount of acid and pepsin, there should be no difficulty in digesting a mixed meal, providing the stomach empties itself properly. To exclude the introduction of lactic acid, as in cases of suspected carcinoma of the stomach, it is customary to give Boas's meal of oat gruel, made by cooking to a pint a quart of water, containing a tablespoonful of rolled oats. The stomach is previously washed thoroughly.

Motor power. — If symptoms of motor insufficiency are present after mixed meals, while a normal amount of contents is found one hour after the Ewald meal, we decide the question of motor power by washing out the stomach six hours after Riegel's test dinner, consisting of 400 c. c. of soup, 200 grammes of beefsteak, 50 grammes of wheat bread, and 200 c. c. of water. No food, or only slight traces, are found if motor power is normal. With exaggerated motor power the stomach is emptied precipitately. The Ewald-Sievers salol test has proved unsatisfactory in our hands. Also in cases of suspected motor insufficiency we make macroscopic and microscopic examinations of the contents or washings of the fasting stomach in the morning, a heavy mixed meal having been eaten the previous evening.

Number of examinations. — For diagnosis two examinations should be made with an interval of one or two days.

Estimation of pepsin. — Twenty-five c. c. of filtered gastric juice, if containing a normal amount of free HCl and pepsin, should dissolve five centigrammes (three-quarters grain Troy) of coagulated egg albumin in three hours at 37° to 40° C. To 25 c. c. of filtered gastric juice enough hydrochloric acid is added, if necessary, to make the free acid between 0.1 and 0.2 per cent. If free HCl is absent, about five minims of dilute HCl is added to the 25 c. c. Then to ensure an effective test, always test for free HCl. Five centigrammes of the white of a hard-boiled egg is added and the temperature maintained at 40° C. until the egg disappears.

Blood. — Blood in the gastric contents is usually altered. The microscopic examination may detect it in any form, but where it is reduced to pigment the best method of proving its nature is to form Teichmann's hemin crystals as follows: Evaporate a drop of normal salt solution on a slide and place a little of the pigment on the layer of crystals. Place cover-glass over and fill the space between this and the slide with glacial acetic acid. Heat carefully until bubbles of gas form under the cover-glass. As the acid evaporates, continue its addition, drop by drop, until a faint reddish-brown color is seen. Then allow the acid to

evaporate completely, add a drop of glycerin, and examine microscopically for brown rhombic plates. Müller-Weber's test is easier: To the contents or to the sediment add a few drops of glacial acetic acid and shake with ether. If blood is absent the ether forms a clear or slightly yellowish zone above the contents. A brownish-red zone indicates blood. If the zone is not clear add more ether or a few drops of alcohol.

Inflation of stomach. — For routine practice it is best to inflate by forcing air through the stomach tube by means of a syringe or Politzer bag. By this means the distention is gradual and under control. A convenient method is to have the patient drink 30 grains of sodium bicarbonate in solution, and immediately afterwards a solution of 15 grains of tartaric acid. This can be repeated if the amounts are too small. It is safer to repeat moderate amounts and avoid overdistention.

In outlining this scheme of analysis no claim to originality is made. The only object has been to select such tests as are sufficiently accurate and at the same time suitable for the busy practitioner. If in the examination of a few digestive cases one will follow the suggestions contained in this paper, I am sure that he will agree with me that

(1) In many digestive cases an accurate diagnosis cannot be based alone on symptoms.

(2) That a rational examination is practicable for the general practitioner.

(3) That by neglecting such examination, the physician can do his best neither for his patient nor for himself.

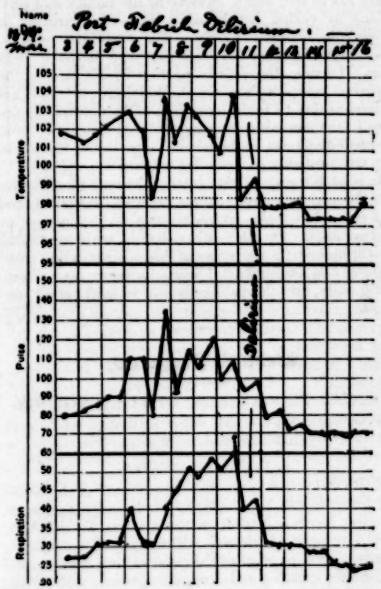
A CASE OF POST-FEBRILE DELIRIUM.[1]

BY ROBERT W. GREENLEAF, M.D., BOSTON.

The following case is of interest in presenting a somewhat unusual condition in the convalescent stage of pneumonia.

The patient, a gentleman sixty-nine years of age, while at his place of business on March 3, 1899, was seized with faintness and vomiting. He had had a slight cold for several days. On reaching home his temperature was 102°, pulse 82 and strong, respirations 24. Signs of bronchitis were present. Two days later pneumonia began in the right lung without pain or chill. The temperature was 103°, the pulse 110, and respirations 40. Two days later still the temperature and pulse fell to normal, but the respiration fell to only 30. This is of interest, as illustrating a condition occasionally found in pneumonia, and known as pseudocrisis. One may easily be misled by it into giving a favorable prognosis, but the rapid respiration and the unresolved pneumonic process should put one on one's guard. In this case serious symptoms recurred in the evening, as if a conflagration had arisen. The left lung, previously clear, was invaded at its upper lobe. The temperature rose to 103.8°, pulse 136, respirations 46. For the next four days the temperature varied from 101.5° to 104°, the pulse from 100 to 140, the respirations 50 to 60, and on the fourth day even reaching 70. The pulse was variable and intermittent during the disease, and when first ill an anemic souffle was to be heard, which had not previously been detected in his case. During the entire illness the patient was mildly delirious; at times he was dull and apathetic. He took nourishment and treatment well. Though his age and the considerable amount of lung area involved were against him, yet at no time did he appear to be in extreme danger.

The especially interesting feature of his case, and the one for which I report it this evening, was the condition arising on the day of his actual crisis, namely, the seventh of his illness and the fifth from the pseudocrisis. On this day the temperature dropped to normal, the pulse was 96, the respirations were 40, and signs of resolution were progressing rapidly. Coincident with this marked improvement his mentality became greatly changed. Instead of the mild, dreamy delirium and his docility under treatment, he became



practically insane. He absolutely refused food and medicine, and was enraged to the point of resistance because he was not allowed his clothes and was kept in bed. Though calmed by the time of my visit, when I tried to give him medicine he dashed the spoon across the room and objected to any treatment. Thoughts of suicide were also present. He had no conception of how ill he had been, and could not see any reason for the care given him.

In addition to the night and day nurse attending him a male nurse was secured, and towards night he concluded to accept the situation. He excused this change of attitude on the ground that further opposition was useless, also because of a delusion that though he had refused medicines by the mouth in some way I had managed to get them into him through the air. His smothered resentment and insane desire to be up

[1] Read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

and dressed lasted about four days. It gradually lessened, and by that time was nearly gone. Curiously enough, he was fairly strong during this period. His pulse was regular and of good volume.

What shall we call such a perverted mental state? Was it insanity? was it hysteria? or was it simply a delirium? Post-febrile insanity is occasionally found after exhausting disease, as typhoid or pneumonia, just as it is also occasionally found after surgical operation, but its symptom-complex usually presents a more varied, more marked and especially more permanent set of symptoms than occurred in our case. Therefore, though I considered him insane on the day of the crisis, and inclined to a serious prognosis, I now think that the condition was not insanity. As to hysteria, it is quite a question whether that is not the correct diagnosis. The patient for the preceding five or six years has caused much anxiety to his family and physicians by varied attacks of a nervous character in which the element hysteria was certainly present. The diagnosis rests between that and atypical delirium. During the febrile portion of his illness the disturbed mentality was simple delirium, such as is explained as due to toxin irritation. Though the symptoms in the convalescent stage differed materially from the preceding ones of the febrile stage yet on the whole they are probably of a similar origin.

It is of interest in the further history of this case that the patient's strength has gradually returned, and that there has been no recurrence of the symptoms above noted. On the other hand, with returning health, he has shown some of his long-standing restlessness and insomnia. These, however, are diminishing daily, and the patient is now in fairly good condition.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WM. DUDLEY HALL, M.D., BOSTON.

(Concluded from No. 16, p. 392.)

BLEPHARITIS ACARIA.

E. RAEHLMANN[7] says that the presence of the demodex folliculorum in all stages of development, eggs, embryos, larvæ and adults of both sexes, he considers to be a cause of blepharitis without any distinguishing features. There were the usual swelling and redness of the lids, crusting and irregular growth and falling out of the lashes. Balsam of Peru and lanolin, one to three, caused such a rapid improvement, and as living acari were found after the symptoms were relieved, and as also acari may be found along lid margins which are apparently normal, it is possible that they merely accompanied an accidental blepharitis. In looking for the parasites one must put the freshly epilated hair upon a glass slide and examine with a low power in water, when will be found both the male and female animals, larvæ, embryo and eggs, showing that the entire process of generation takes place in the hair follicle. In addition to these there will also be found their metabolic products.

DACRYOCYSTITIS IN INFANTS.

Jocqs[8] states that this condition in infants is generally attributed to an imperforate condition of the lower end of the nasal duct. According to the researches of M. Cosmettetos, the lachrymal canal starts from the sac, forms a fibrous solid cord stretching down from the sac towards the nose, solid at first but soon becoming pervious, as can be seen in the embryo partially completed in the third month. If, therefore, perforation does not take place as it should, the secretion will accumulate, become infected, and thus we have a dacryocystitis. The inflammation may become purulent as early as the third day and may be mistaken for an ophthalmia neonatorum, but usually it may remain without any unusual manifestations for several weeks. According to Jocqs, the rational course to pursue is to try and promote absorption of this fibrous band, and he advises rather vigorous injections of weak antiseptic fluids, but does not countenance the use of the probe. If there is abscess formation he advises frequent emptying of the sac and after which the injection of a 20-per-cent. protargol solution. The prognosis is usually good.

THE ULTIMATE RESULTS IN THE TREATMENT OF GLAUCOMA.

Zidler-Huguenin[9] deduces the following from the private practice of Professor Haab, of Zurich. He divides the cases into three categories: (1) Inflammatory glaucoma (acute and chronic); (2) non-inflammatory glaucoma (glaucoma simplex); (3) hemorrhagic glaucoma. In more than half of the cases of acute inflammatory glaucoma iridectomy was followed by complete cure and the cases not cured were invariably benefited. A cure was obtained in 62.5 per cent. of acute cases and in 60 per cent. of the chronic cases. In only three cases was iridectomy followed by malignant glaucoma, once after acute glaucoma and twice after glaucoma simplex. After the operation for acute and chronic glaucoma useful vision was obtained in 91.47 per cent. of the cases. As regards glaucoma simplex, in 78.41 per cent. of the cases after iridectomy and in 60 per cent. of the cases after sclerotomy the vision was either improved or remained the same. He advises myotics with the sclerotomy. For hemorrhagic glaucoma he advises sclerotomy and claims cure in 20 per cent. and no falling off in 40 per cent. of the cases. He explains his good results by the fact that the cases reported were seen in private practice.

THE RESECTION OF THE CERVICAL SYMPATHETIC IN THE TREATMENT OF GLAUCOMA.

Jonnesco's[10] conclusions are as follow: These operations have demonstrated the important bearing which the cervical sympathetic has upon the etiology of glaucoma, with the exception of the hemorrhagic variety, as the removal of the cervical ganglion paralyses the nerves which give rise to the most troublesome of the glaucoma symptoms. The best results are obtained in those cases where irritation and inflammation are not too pronounced. The operation, however, is comparatively insignificant, and should be resorted to in all cases of glaucoma, even in absolute glaucoma. Improvement usually takes place immediately after the operation, and in a majority of cases is permanent and at the same time progressive. The operation has often proved successful in giving relief where iridectomy has failed. In cases where glaucoma and Basedow's disease coexist the resection of

[7] Klin. Monatsbl. f. Augenheilk., February, 1899.
[8] La Clinique Ophthalmologique, May, 1899.
[9] Beiträge zur Augenheilkunde, Heft 32.
[10] Wien. klin. Wochenschr., 1898, No. 18.

the cervical sympathetic will influence for the better both conditions.

THE VALUE OF ACOIN AS A LOCAL ANESTHETIC IN EYE SURGERY.

Randolph [11] mentioned Trolldiener's recent experiments upon rabbits with acoin, a new anesthetic, and reported upon his own use of it in the human eye. He had tried it for the removal of foreign bodies, pterygii, tarsal tumors, etc., but did not find it as satisfactory in some respects as either cocaine or holocaine. In those cases where there was much congestion repeated instillations were necessary to make the removal of a foreign body possible. The stinging sensation following its application was greater and its anesthetic action slower than either cocaine or holocaine. Bacteriological experiments seemed to show that it would kill bacteria after a length of time something under twenty-four hours. A one-per-cent. solution gives about the same result as regards time as cocaine in a quiet eye. There are no corneal defects after use. It has no effect upon the accommodation, does not affect the size of the pupil, and does not increase the intraocular tension.

LOCALIZATION OF INTRACRANIAL TUMORS.

In a discussion of the Neurological Society of London, it was remarked that in order of frequency of optic neuritis in tumors those of the cerebellum came first, then of the basal ganglia, then of the occipital, frontal, and temporosphenoidal lobes, rapid growth, increase in amount of the cerebro-spinal fluid, and basal meningitis being the conditions which contribute to its onset and severity. Gunn [12] thinks that a unilateral neuritis or a unilateral excess of neuritis may aid somewhat in localizing. According to his idea the further forward the growth is the greater probability is there that the neuritis may be either unilateral or worse on the same side. It seems to him more likely that a tumor of the right frontal lobe may cause a right-sided neuritis than an occipital tumor, or certainly than a cerebellar one. He also suggests that minor differences, anatomically speaking, in the orbit and its contents may predispose, and suggests that differences in the refraction of the two eyes may cause a difference, real or apparent, in the degree of ophthalmoscopic change.

HAAB'S OR HIRSCHBERG'S ELECTROMAGNET.

Max Linde, [13] in reviewing a number of cases published from the Vienna clinic by Sachs, concludes that removal of a foreign body from an eye by means of a Haab magnet is sometimes productive of more serious results than would have been caused by the original injury. In several instances either the iris, lens or ciliary body was injured and in another the magnetic force was sufficient to drag the piece of metal through all the coats of the globe at the wound of entrance. He thinks that in the majority of cases better results can be attained by use of the weaker magnet. If there be an opening into the anterior chamber the application of the Haab instrument is apt to cause prolapse of the iris, hemorrhage into the anterior chamber or rupture of the zonule, while if the opening is in the posterior chamber there may be severe injury done the vitreous body with detachment of the retina. The Haab giant magnet is adapted to those cases where the foreign body is at the angle of the anterior chamber or so situated as not to be approached by the magnet probe.

[11] Report of the American Opthalmological Society, 1899.
[12] Brain, Autumn, 1899.
[13] Centralbl. für Augenheilk., January, 1899.

RETINAL LESIONS IN LEUKEMIA MYELOGENICA.

Frænkel [14] reports that in the retina were numerous closely set, often confluent, bright-red hemorrhages, immediately surrounding the papilla; there were also punctate extravasations, situated more peripherally, and white patches more or less striated in appearance, continuous with the disk and resembling medullated nerve fibres. These lesions are, however, not to be distinguished from those met with in pernicious anemia. Deutschmann, although he agrees with Frænkel, is convinced that there is an ophthalmoscopic picture peculiar to leukemia, namely, a peculiar orange color of the fundus oculi, which may be present in cases without visible retinal lesions. The cause of this orange tint is uncertain, but it is probably due to an infiltration of the choroid with leucocytes, and it must also mean that the retinal pigment epithelium has become transparent. Pathological changes have been found in this layer in leukemia.

"TARE NERVEUSE" AS A FACTOR IN STRABISMUS.

De Micas [15] finds among the immediate and collateral ancestors of patients with squint a great number who are neuropathic, the commoner forms of such neuropathy being, in order of frequency, idiocy, psychoses, and epilepsy. An ametropic child of neuropathic parents will usually squint, and, although the ametropic may have strabismus without any hereditary predisposition, a hereditary predisposition may bring about strabismus in a child whose eyes are emmetropic, as, for example, an hysterical squint. The neuropathy in the sense understood by the author need not be characterized by the advanced degeneration existing in the hysterical, epileptic, and the like. The hereditary disposition caused by ordinary nervousness in the parents may manifest itself in the children only in convulsions and such unimportant and quickly forgotten symptoms and yet be sufficient to bring about squint.

THE VALUE OF LOHNSTEIN'S HYDRODIASCOPE IN CASES OF KERATOCONUS AND IRREGULAR ASTIGMATISM.

Majewski [16] gives an interesting account of how Lohnstein corrected a high degree of keratoconus in himself by constructing what he called "*Wasserbrille.*" The author uses a modification of the above-mentioned instrument, shaped more like an ordinary pair of spectacles and much lighter and more comfortable. The fluid with which the chambers are filled is the physiological salt solution and no ill effects were ever seen from its contact with the cornea. He gives an analysis of 14 cases, in none of which could any improvement be obtained by ordinary lenses. He reports one case of irregular astigmatism, the vision of each eye being $\frac{6}{15}$, there being no improvement by glasses, yet with Majewski's instrument the vision came up to $\frac{6}{6}$.

THE PRESENT STATUS WITH REGARD TO THE TREATMENT OF DETACHED RETINA.

De Wecker [17] thinks that operative procedures for the relief of retinal detachment tend to make matters

[14] Munch. med. Wochenschrift, No. 28, 1898.
[15] Ann. d'Oculist, February, 1899.
[16] Klin. Monatsbl. f. Augenheilk., May, 1899.
[17] Ophthal. Klinik, June, 1899.

worse, as the vitreous, choroid and retina are by necessity injured. He still adheres to the view advanced by Rehlmann in 1876, that the detachment is caused by the disturbances in the exosmotic currents or streams which pass through the retina, and as a result would have an influx of water to the vitreous overloaded with salts. He has sought to divert these currents outwards by injecting salt solution beneath the conjunctiva. For twelve years he has made the injections directly into Tenon's capsule, but recently has been employing solutions of gelatine as being less painful. He gives as a formula: Physiological salt solution, 100, and white gelatine, 3.5; this to be sterilized at a temperature not higher than 105°. He makes two injections each week and gives sublimate pills internally.

THE OCULAR SYMPTOMS IN DISEASE OF THE CORPORA QUADRIGEMINA AND PINEAL GLAND.

Dr. Ludwig Bach,[10] in his valuable contribution, concludes that isolated disturbances of the corpora quadrigemina in the case of human beings do not lead to blindness, nor can we say what lesions lead to visual disturbances. Double-sided disturbance in the roof of the corpora will in all probability cause reflex pupillary rigidity on both sides, while a one-sided disturbance will cause reflex rigidity on the same side. Muscular disturbances and symmetrical paralysis are to a certain extent characteristic of affections of the corpora. Isolated paralyses of certain eye muscles do not seem to point especially to it, while paralysis of the trochlear and motor oculi together strongly suggest it. Ataxic symptoms are frequently seen quite early.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

Regular meeting Wednesday, April 19, 1899, Dr. H. F. Vickery in the Chair.

Dr. Arthur C. Jelly read a paper entitled

THE RESPONSIBILITY OF THE ATTENDING PHYSICIAN WHEN A WILL IS MADE.[1]

Dr. Cheever: I have come to an age when I have seen a good deal of these things and I think that all the points in the paper are very important to remember. The writer did not touch, I think, upon the condition which is produced in some diseases of the kidney on the brain, nor the use of drugs like opium. Both these conditions might be held to invalidate the reasoning power of the patient when he made a will. It is so common now to break wills that it has been said rather jocosely that the only object of making a will is in order that your executors or friends might not be required to give bonds. A will which involves any large amount of property where there are a number of scattered heirs is sure to give dissatisfaction, and the experience seems to be in this community that most of these wills are attacked; some of them are broken, but frequently they are settled by a compromise.

The Massachusetts law is very unsatisfactory with reference to the position of the medical man in this State. Of course there may be circumstances in the patient's life about which the physician would feel some delicacy or reticence in speaking unless it were a case that involved a criminal prosecution endangering the life of another person, as in case of assault or murder, when of course no reticence should be observed. But in questions of ordinary right and wrong in civil suits, and in questions of property, very often contests arise where the doctor is placed in a cruel position in court as to whether he shall tell or not what he knows about the patient and what he regards justly as a professional confidence. He may not have been the attending physician, may have been consulted in his office, may have learned certain facts which the patient confided to him as he would to a priest, and his reticence certainly ought to be respected in the same way, but it is not, and he is obliged by law, if called upon, to tell whatever he knows, or else be adjudged in contempt of court and be fined and imprisoned. That is the present condition of the law. I am not aware that here in Massachusetts the courts or judges have ever attempted to make the father confessor in the church give up his secrets, but they have enforced that upon the physician, and what would take place in case he stood out I do not know. I hope the case may be tested sometime. I bring this up in order that the younger men may remember that they must be very careful about what they hear from patients and what they tell, for, unfortunately, under the Massachusetts law, they are not protected as to professional secrets. A doctor may feel that in honor he ought not tell, may not tell and may take the consequences. If he feels it is foolish to contend with the Commonwealth in this way he may, to a certain degree, save his feelings by refusing to answer, and then answer under protest when forced to do so. In that way he may appear rather better in the eyes of the public and in the eyes of the court. He never will appear well in the eyes of the friends of the patient whose secrets he has made public.

Although this has not so direct a bearing on the question of sanity with regard to wills, yet it has a remote bearing, and is so important I thought I would speak of it, more especially since my attention has been called lately to the fact that in New York State the law has been more vigorously asserted than ever in the opposite direction. Some time ago I had occasion to look up the condition of the law in various States of the Union, and I found that New York and some of the newer States in the West, I think quite a number of them, had enacted laws which protected the physician absolutely as to the secrets of the sick-room. And recently I believe a law has been passed by the Assembly in New York, and I presume has been approved by Governor Roosevelt, — at any rate I should think he would be a person who would be likely to approve a law of that kind, — making it a penal offence for a physician to reveal in any way anything that has come to his professional knowledge in connection with a patient, whether by the patient's statements or by his observation. We must draw the line somewhere, and it won't do to have physicians held to secrecy in the positions they hold in relation to other people if a question of crime or life is on hand; the truth must

[1] See page 411 of the Journal.

[10] Zeitsch. f. Augenheilk., Bd. I, Heft. 4, 5.

come out in order to punish the criminal and protect the community. But why should the foibles or weaknesses of one who comes to you for treatment be betrayed in court to the disgust of the whole community, perhaps to the deplorable sacrifice of the feelings of wife or friends, on some trifling question of property? I contend that we should resist, and if we cannot enforce this thing alone we should have a combined effort by which we may get the law altered.

Another thing is life insurance. Almost every patient of any means is insured, and the family physician's statement on the insurance papers is always sought for; it is, in fact, a *sine qua non* as to the surviving relatives getting the money. The question of suicide often comes up. It has happened to me twice, and it will happen to you all in the course of your professional life. Some policies are invalidated by suicide. Some suicides are clear and well known, but some are done so neatly and obscurely that the doctor cannot tell whether the death was accidental or by design, and here the physician must exercise great caution and be very careful what he says at the moment when he is called to a case of sudden death, because he may let out something he did not wholly mean; it is taken up either by a nurse or sometimes by the undertaker, and transmitted to the public; appears in the papers the next morning, to the physician's horror, as the true state of the case. Too much discretion cannot be observed here and too much care in keeping silence, just as we should guard the secrets of the family under other circumstances.

Dr. R. W. Greenleaf reported

A CASE OF POST-FEBRILE DELIRIUM.[2]

Dr. Jackson: Dr. Greenleaf has presented a very interesting case. I have seen serious mental disturbance follow typhoid, but I have not seen it follow pneumonia. I wish to speak of one other point not exactly connected with Dr. Greenleaf's paper and that is the danger of collapse in the crisis of pneumonia. The books speak of possible danger of collapse. Last summer I lost a child in the collapse of the crisis and I had an adult who was very sick. I speak of this in connection with other serious disturbances following the crisis.

Dr. Cheever: I should like to ask the Chairman if it was not once an accepted idea — may be so still — that pericarditis was liable to be accompanied with a good deal of acute violent delirium?

The Chairman: I believe so, sir.

Dr. Cheever: I have sometimes thought in cases of pneumonia that pericarditis was the cause of great mental excitement. I merely advance the idea. I wish some one else would take it up.

Dr. Vickery: I think perhaps in this connection it might be well to speak of the possibility at the beginning of an acute febrile disease of symptomatic delirium being mistaken for acute insanity. Such cases might be, and sometimes have been, carried to insane hospitals much to the subsequent regret of the family and of the attending physician. A chance to make that mistake comes to most of us sooner or later. Post-febrile delirium of the sort Dr. Greenleaf has described has been very rare in my experience. In typhoid fever I have seen aberration, amounting practically to a melancholia, but no such thing as he has described.

[2] See page 419 of the Journal.

Dr. Jackson: I should like to ask Dr. Jelly what he considers the prognosis of mental disturbance following acute febrile disease, such as typhoid?

Dr. A. C. Jelly: My impression is that the prognosis is usually good, unless there is a predisposition to insanity. The cases I have seen have all been melancholia; in some of them frequent feeding by the tube through the mouth or nose was required; several such have recovered. I never saw a case following pneumonia. The disease-process lasts so much longer in typhoid that one can understand why it leads to mental disturbance more frequently than in pneumonia.

The possibility of mistaking typhoid for insanity, to which Dr. Vickery has alluded, is very important. I saw a case recently where it seemed impossible to make a diagnosis at once; the man was restless, apprehensive, unwilling to submit to physical examination, his pupils dilated, his expression stupid, his pulse 120; his friends said that he had diarrhea, and at night high fever. We thought it was probably mania, but we were not certain; after two days at the Massachusetts General Hospital, careful examination showed that it was not typhoid. There are many reasons why it is unfortunate to send a case of typhoid to a hospital for the insane.

Dr. M. P. Smithwick read a paper entitled

EXAMINATION OF DIGESTIVE CASES.[3]

Dr. Liebmann: It seems to me in the examination of patients the mobility of the stomach ought to be tested. In my opinion this is of great importance. We might make the mistake of putting some of our patients down as cranks because we did not find any change in the chemistry of their stomachs. Their chemistry might be going on all right and normally, and still there might be something material the matter; that is, there might be a disturbance in the timely expulsion of the stomach contents into the intestinal canal. Of course in hysteria or neurasthenic cases this might be present without any organic disease of the stomach, and to find that out is important; we should examine the stomach contents in the morning after the last meal has been taken the evening before and in that way we can easily determine whether the stomach empties itself right or not, and in a great many cases, especially neurasthenics, I find there are some small particles of food still present in the morning, and this may account for their abnormal feelings.

Dr. Henry Jackson presented the subject of

FUNCTIONAL DISEASE OF THE HEART.[4]

Dr. Arnold: It seems to me the question of the murmurs is an important one in discussing the question of functional and organic heart disease. The distinction between functional and organic disease is a clinical one, while pathologically the conditions merge gradually from one into the other. We can divide the murmurs into three classes. There are murmurs in valvular disease, for instance, that we all recognize unquestionably as organic. There are other transitory murmurs coming in cases of debility or similar conditions which we would all agree to call functional. Then there is the intermediate class in which there is more or less uncertainty, and about which there are a great many theories. It is of practical importance, it seems to me, to come to as clear an understanding as

[3] See page 415 of the Journal.
[4] See page 408 of the Journal.

we can in regard to these murmurs, both because we are asked by our patients for an opinion and because the exact condition which underlies them may rightly affect the line of trea ment. In distinguishing between the two main classes of organic and functional murmurs, there is no one sign on which we can base a definite opinion. We are generally told that a functional murmur is of low tone and blowing quality, and yet we know that we have functional murmurs that are very loud and high-pitched; in fact, much more so than some organic murmurs. Functional murmurs are said to be transitory and organic murmurs are permanent, yet some functional murmurs, particularly anemic murmurs, last a long time and some organic murmurs in time disappear.

It is generally agreed that the functional murmurs are systolic in time, and therefore at present we shall consider these alone. The question of the location of the murmur and of the area over which it is transmitted is generally accepted as being of importance. It is generally said that functional murmurs are not transmitted to any distance from the heart, as organic murmurs are. In considering the location at which murmurs are heard, I think it is important to keep clearly in mind the anatomical picture of the organs within the chest, instead of thinking only of the four points or areas which are associated with the different valves. In that way we shall understand better some of the rather complicated phenomena which we find in connection with murmurs. We speak of the apex region as the mitral area, and yet I think we have all seen cases where an aortic systolic murmur is transmitted very plainly to the apex region. If, for instance, we were to think of this region as the area of the left ventricle, carrying the anatomical picture in our minds, we would be less likely to mistake an aortic systolic for a mitral murmur, the path by which each murmur gets to this point being the ventricle. There is another area, that directly over the valves, about the junction of the third cartilage with the left border of the sternum, to which I do not think we always pay enough attention. Again, bearing the anatomy in mind, if we remember that this is about the base of the heart, and at the thicker part of the ventricles, we can easily understand why any murmur at any of the valves may be pretty plainly transmitted to this point. We may speak of this as the valvular area.

I want to say a word about mitral murmurs, as that leads me to a certain view in regard to hemic murmurs. I have found that at this valvular area mitral murmurs, to my mind undoubtedly mitral murmurs, are often very distinctly heard and are transmitted upwards and outwards to the left, reaching into the second intercostal space. Other murmurs starting in the same area are conducted round to the left side of the heart, and others still are transmitted further and are carried in that way down to join the ordinary mitral murmur. We also find the mitral murmurs very frequently transmitted to a certain region in the back which is often spoken of as the "mitral area" there.

Coming to anemic murmurs, as these represent the functional murmurs perhaps better than any others, I will try in a few words to sum up the results in some cases I have been investigating in that line which lead me to the view that most of the so-called anemic murmurs are really due to mitral regurgitation instead of being due to the condition of the blood alone. It would appear that we have been forced into the view of considering that anemic murmurs are due to the condition of the blood largely because they are heard in the second intercostal space on the left. We ordinarily regard this as the pulmonary area and ascribe the murmur to the pulmonary artery; then finding no lesion of the pulmonary artery, we go to the blood for an explanation. Among the anemic cases I have found some where the murmur is heard only in this second intercostal space; in others it is carried from here round the left border of the heart into the third and fourth intercostal spaces; in others it is carried still further down to the apex in a continuous area of transmission, and in still others it is heard over this last area and also in the back. These last I think we might very easily agree are cases of mitral insufficiency, the deciding point being that the murmur is transmitted to the mitral area in the back. By this same test, however, many of the other cases should also be attributed to mitral insufficiency, for in all these different groups of anemic murmurs I have found some cases where the murmur was heard in the mitral area in the back, whether heard at the apex or not. It was a genuine surprise to me to find murmurs heard at this area in the back when in front they could be heard only in the second left intercostal space. That we are right in considering these different groups of anemic murmurs as different phases of the same fundamental conditions is shown, I think, by finding instances where in the same cases the murmurs have in turn the characteristics of the different groups. For example, I have seen several cases that have started with a condition that would ordinarily be accepted as mitral insufficiency, with a continuous area of transmission from the base around the left side of the heart to the apex and back which have later split up into a murmur heard at two separate areas at the base and at the apex, and afterwards the apex murmur has disappeared entirely and you have nothing left except what would ordinarily be called an anemic murmur.

To-day I had the pleasure of participating in the examination of some of the men who ran in the Marathon races of the Boston Athletic Association. These men ran twenty-five miles and showed a condition of great muscular exhaustion. It seemed to me we might there find a practical test of this question, for by overstrain and exhaustion of the cardiac muscle we artificially induce a weakened condition of that muscle, similar to what may be assumed to exist in anemia or debility. The reason for the insufficiency of the mitral valve under these conditions lies in the fact that the mitral orifice is closed partly by muscular action as well as by the valve itself, and, that when the muscle is sufficiently weakened from any cause, the narrowing of the orifice by muscular contraction is incomplete and the valve leaks. Of 13 men examined at the end of the race we found murmurs in 11. In all of these cases we found a systolic murmur, heard in more or less the area that I have tried to describe. In six of them the murmur was confined to the left intercostal space and transmitted more or less around the left side of the heart, but not reaching the apex. In the other five it followed the same line of transmission, but was also heard at the apex and at the left of it, and was heard in the back at the mitral area. It seems to me that the only conclusion is that in all those cases the murmur was caused by the same process and that that process was a straining or tiring of the heart muscle and causing a temporary leakage from the mitral

valve. It was also interesting that in almost every case the murmur disappeared after a very few minutes when the contestants had had a chance to rest, and the cardiac muscle had regained its tone.

Dr. Smithwick: Two years ago a young man came to me in an attack of palpitation which had come on while he was waiting for a street-car. The heart was large and at the first examination was beating so rapidly that it was impossible to tell what sort of lesion was present. The next morning I made out a very marked aortic regurgitation. He had been subject to these attacks for five years at irregular intervals, averaging once a month for a year, and they usually lasted about six hours. The last attack was in November, 1897, and lasted eighteen hours. I was interested in what Dr. Jackson said about the treatment with bromide. My patient had digestive symptoms, largely gas formation, and was very irregular in his meals. Bromide and regular meal hours stopped the attacks. The association of this functional disturbance with a marked organic lesion was rather interesting to me. I have had a case of exophthalmic goitre in which palpitation was a prominent symptom that had done very nicely under bromide and iron.

Dr. Otis: With regard to pseudo-angina, to which Dr. Jackson has referred, I recall a rather interesting case which was under my care, in which the diagnosis was doubtful as to whether it was angina vera or pseudo-angina; at all events the attacks simulated those of true angina, for which I gave the patient some nitroglycerin to use whenever the attacks occurred. I had at the time under my care a gentleman suffering from serious cardiac organic lesion, and he had been persuaded by his wife to try some homeopathic remedy. He said it always relieved him when he had serious attacks of pain. The remedy consisted of the "carbo veg." of that school, tiny charcoal granules. He presented me with some, and the next time I visited the former patient I asked him to try them, stating the fact that a gentleman with cardiac trouble had expressed himself as experiencing relief from their use. He afterwards reported that he obtained equally good results and relief from his pain as he did previously from nitroglycerin, evidently a case of mental effect.

Dr. Engelmann: Functional disturbances interest us all, and it has given me especial pleasure to hear Dr. Jackson's paper, as I have for many years closely observed those, to me, very striking phantoms of disease, without pathologic significance, the reflexes or functional neuroses, which occur in connection with utero-ovarian lesions as concomitants or dependents. Amongst these, cardiac neuroses of a minor degree are quite frequent; the patient herself is often aware of the condition of her heart, and it gives her anxiety. She observes the intermission, the irregularity of pulse, palpitation and pain, and dread of heart disease, like the fear of the insane asylum, is not an uncommon accompaniment of pelvic disturbance. In connection with utero-ovarian lesions, I have noted all the varying symptoms which the essayist has described, the angina, violent cardiac pains aggravated during the period and with aggravation of the pelvic disease; the loss of a beat now and then, usually one in six or eight, and tachycardia, but I cannot agree with Dr. Jackson in placing flushes and cold extremities in the same category. These I have generally seen as peripheral, as vasomotor, and not as cardiac neurosis.

Medication gives but temporary relief; the functional cardiac symptoms, especially when distinctly reflex, cease with improvement of the accompanying pelvic condition by treatment or its removal by operation, and after a satisfactory survey of the case — the functional nature of the irregularity determined — treatment may be confined to the causative condition. I miss, in the very complete paper, the necessary emphasis which should be given to removal of the cause, the only method of treatment upon which we can depend, and I may add that I have the same criticism to make on that most admirable article of Flint's in Pepper's "System of Medicine," which is one of the first and most authoritative on cardiac neuroses.

In a distinctly functional disturbance, generally reflex as I have found it, removal of the cause alone assures a satisfactory result; in the treatment of my patients I have usually avoided cardiac remedies and have given attention to the causative uterine condition alone, thus obtaining permanent relief and distinctly demonstrating the reflex or functional character of the irregularity. I should say with Boldt that we find such cardiac symptoms in from six to eight per cent. of chronic uterine cases; they claim the attention of the gynecologist, as they do that of every practitioner and the life insurance examiner; the heart responds to the emotions, to cerebro-spinal, to splanchnic invitation as it does to utero-ovarian stimulus, and these semblances of disease appear in every field of our work.

Recent Literature.

Materia Medica, Therapeutics, Medical Pharmacy, Prescription Writing and Medical Latin. A Manual for Students and Practitioners. By William Schleif, Ph.G., M.D., Instructor in Pharmacy in the University of Pennsylvania. Lea's Series of Pocket Text-Books. Series edited by Bern B. Gallaudet, M.D. Philadelphia and New York: Lea Brothers & Co. 1899.

This is not a practical pocket text-book, because it is too bulky; it is not a text-book for home study, because it is merely a compilation on a small scale of the work of others. An idea of the book may readily be formed by reading what it gives on the therapeutics of pepsin: "Naturally the chief indication for pepsin is weakened digestive power. When hydrochloric acid is wanting or diminished in the gastric secretion, the addition of this element undoubtedly increases its value. Even at the standard strength indicated above, the doses habitually given could be of very little actual benefit unless a stimulant action upon the mucous membrane takes place; and some authorities are skeptical as to its real value. Acting as a ferment, however, its activity may be increased by repeating the dose of hydrochloric acid.

"The diarrhea of children, dependent upon imperfect gastric digestion, may be greatly benefited by pepsin. It has been suggested as a solvent for diphtheritic membranes and blood clot in the bladder."

Comment is unnecessary. No mention is made of heroin, urotropin, dermatol, tannigen or orexine.

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DISEASE AT SUMMER RESORTS.

THE ingenuity of man is well exemplified in the modern large summer hotel. Built, as a rule, of inferior material, arranged to accommodate the greatest possible number of people consistent with decency, deserted for the greater part of the year, it is not to be wondered at that its sanitary appliances are often defective and that disease finds there a ready soil for growth. To prepare for the reception, perhaps, of several hundred people is, in any case, not an easy problem, and when this is complicated with the necessary imperfections of construction of the ordinary summer hotel, one finds only cause for surprise at the relative health maintained by its guests. A counteractive element, no doubt, is the otherwise normal life which frequenters of summer resorts are likely to lead. There is, however, sufficient evidence to show that these resorts breed disease to an extent which demands active investigation.

Our attention has been called to the matter by some comments in the September number of the *Bulletin of the Connecticut State Board of Health*. Dr. C. A. Lindsley, the secretary, maintains that as cases are being more carefully registered, it appears that a large proportion of the victims of infectious diseases are among those who have been visitors at the various summer resorts. He writes, in part, as follows:

"Summer guests themselves are learning to appreciate the risks of hotels, boarding houses and even their own shore cottages. The last, in popular localities where the price of land is high, are often so closely crowded together on small lots, with no special provision for sewage disposal, that they are frequently more unhealthy places of residence than the homes they leave in the city. The proprietors of the large hotels which are most liberally patronized know full well that a case of typhoid fever would scatter their guests almost as quickly as a conflagration, and hence the hotels are for the most part kept with scrupulous and vigilant attention to the practice of good sanitation. But in the cheaper hotels, and especially in the clusters of shore cottages, the violation of sanitary law is so frequent and so flagrant, that if they were occupied continuously, instead of only for a few weeks at a time, they would soon become dangerously unfit for human habitation."

Dr. Lindsley suggests that apparently sporadic cases of typhoid fever may be due to a single focus of infection at a summer hotel, the disease developing only after the guests have scattered to their respective homes. This has, in fact, several times been proved to be the case. The moment the matter is brought to our attention such a theory seems altogether reasonable; with a certain amount of co-operation on the part of physicians in various States, it would not be difficult to trace many cases to a common source.

Dr. George Dock has recently communicated to the *Philadelphia Medical Journal* an experience which so well bears out the point of view already expressed, that we quote it in part:

"Not long since I visited a celebrated waterfall, one of the many falls where in the summer season the water is dammed up and the "fall" only produced for a pecuniary consideration. Beside the fall is a popular hotel, and the fall is visited by large numbers of people during the season. While I was examining the rock formation below and behind the fall, the water was turned on for some other visitors who stood directly in the spray while they took photographs of the fall. Crossing over to a lower part of the fall, where I was exposed to the edge of the spray, I was struck by the strong fecal odor of the water. I called to the young men that the water smelled suspiciously of sewage, but they were too intent on their camera to pay attention to what I said. At the top of the fall I was told by the young lady who turned on the water that the water was nothing else than the stored-up sewage of the hotel, which was kept for the purpose. My surprise at this information was not lessened when the young lady went on to say that many people who visited the fall, thinking no doubt of Bryant's description of the "sweet light spray of the mountain springs," go down to the bottom of the fall and drink this same water. It is hardly necessary to enlarge upon the possible consequences of these draughts."

No doubt many of us have had more or less similar experiences. In any case one's respect for the summer hotel (there are exceptions), if not already at its lowest ebb, is visibly influenced by such facts as these. Summer is recognized as a time for recreation, but not, we trust, as a time when sanitary laws are to be set aside as inactive. The proximity of the sea does not detract from the offensiveness of a foul odor, nor does it make the cause of that odor any the less deadly in its effect.

APPOINTMENT OF DR. ALONZO E. TAYLOR.—The appointment of Dr. Alonzo E. Taylor, of Philadelphia, to the professorship of pathology in the Medical Department of the University of California is announced.

THE REPORT OF THE BOSTON HEALTH DEPARTMENT FOR 1898.

The current report of the Boston Health Department is of more than usual interest owing to the very decided improvements in the details of its work, which have led to a considerably broadened range of public usefulness. The pamphlet of 148 pages is amply illustrated with charts and tables, indicating the progress made in municipal sanitation. Most striking is a diagram graphically representing the diminution in mortality from diphtheria since the general introduction of antitoxin as a means of treatment.

The total number of deaths for the year 1898 was 10,886, a decrease from the previous year of 268. The population, as estimated at the end of the year, is 541,827, which is based on the geometrical rate of increase between the last two census years, 1885–1895. The death-rate for the year, as calculated on this population, is 20.09 per 1,000 inhabitants. This rate is less by 0.99 than that of the previous year, and the lowest on record. There were 1,470 deaths from zymotic diseases, a decrease of 336 deaths from the same group of the previous year. There were 241 less deaths from diphtheria than in 1897, with a proportionate decrease in the number of cases. As usual, the diseases of the respiratory tract have proved again most fatal, causing fully 25 per cent. of the whole mortality during the past year. Of these, consumption, by which no doubt is meant tuberculosis of the lungs, heads the list, though even here the mortality is less than ever before, and shows a constant general decrease since the middle of the century. The contrary is true of pneumonia, heart disease and bronchitis, which each show a somewhat higher percentage of deaths than during previous years as far back as 1851.

The work of the Department has evidently been vigorously pushed in all directions. For example, the removal of fifty-eight dwellings unfit for habitation has been ordered during the past year, thereby removing a decided source of danger to the public health. It is expected that further authority will be given the Board to remove worn-out buildings which obstruct the light necessary for other buildings, and which foster and cover nuisances of various kinds, to the injury of surrounding property. The tenement house question has also received its share of attention, and improvements of various sorts have been instituted, particularly as regards overcrowding.

The milk-supply question has been carefully studied with a view to the prevention of adulteration and pollution. A large number of rig'd regulations has been passed which are likely to control the sale of milk, and prevent imposition on the part of the dealers. Elaborate blanks, with searching questions, are now required to be filled out by all milk producers, and by those applying for license to sell milk. These blanks must be filled out, returned and approved by the Board of Health bef re a license is issued to the contractor to bring into and sell milk in the city of Boston. A clean and hea'thful condition of cows, their enclosures, all vessels used for, and all persons who handle or deal in milk, its timely and proper cooling and general care, are needed and demanded in the interest of public health, and to this end carefully prepared and explicit instructions are being sent to all persons engaged in producing or handling milk intended for sale in Boston.

No doubt the most important work of the past year has been the establishment of a city bacteriological laboratory, under the management of a skilled director. This laboratory now holds itself in readiness to make examinations of various sorts, which modern medical diagnosis demands, and to serve, as well, as a centre where experimental work and research may be carried on. Speaking of the practical work of the laboratory, the director writes as follows:

"In March, 1898, the Bacteriological Laboratory was established in the Sudbury Building under the direction of Dr. Hibbert W. Hill. The necessary fitting up and equipment was begun at once. On the 10th of May the work done during three years past for the Board of Health at the Harvard Medical School was transferred to this laboratory, with the exception of the making of diphtheria antitoxin, the State Board of Health having agreed to continue the supply. The work consisted at that time principally of the diphtheria diagnosis, but has been gradually extended, so that at the present time regularly organized services exist for the diagnosis of typhoid fever, malaria and glanders also. Rabies cases are investigated, but this disease is not sufficiently prevalent to justify a detailed organization. Examinations for other pathogenic bacteria, such as pus-organisms, gonococci, the bacillus of influenza, etc., are made as may be required. The testing of disinfectants for municipal work is also part of the recognized work of the laboratory."

In general, this city document impresses one with a feeling of the greatest encouragement. Tuberculosis and diphtheria are gradually yielding to improved methods of treatment, and, more important even than that, are being reduced through knowledge of means of prevention. Other conditions, like pneumonia, still claim their victims each year in equal number, but there can be no doubt that etiological investigations carried out in a thoroughly accurate fashion will also lead to at least a partial prophylaxis before very many years have passed. After all, prophylaxis is the end toward which medicine must inevitably work, and our boards of health, as at present organized, are certainly doing much to hasten its more perfect application.

MEDICAL NOTES.

Reception to Dr. Flexner and Dr. Clark. — The Medical Club of Philadelphia will give a reception November 3d, at the Hotel Bellevue, to Drs. Simon Flexner and John G. Clark, late of Johns Hopkins University and now of the University of Pennsylvania.

PLAGUE IN BRAZIL. — Plague is reported as having made its appearance in Brazil, probably having come from Portugal.

INOCULATION OF BRITISH TROOPS. — It is said that the British troops mobilized for service in South Africa have been very generally inoculated against typhoid fever.

CONGRESS ON HYPNOTISM. — The second International Congress on Hypnotism will be held in Paris from August 12th to 16th, 1900, under the presidency of Dr. Jules Voisin.

MARK TWAIN ON CHRISTIAN SCIENCE. — Mark Twain contributes an amusing and disrespectful article on "Christian Science" to the October number of the *Cosmopolitan* magazine. The amazing speech habit of this cult is admirably paraphrased, one can hardly say burlesqued.

AMENDED SPELLING. — The Department of Superintendence of the National Educational Association at its meeting in Indianapolis, Ind., February 17, 1898, appointed a committee consisting of Dr. Wm. T. Harris, United States Commissioner of Education, Washington, D. C., Dr. F. Louis Soldan, Superintendent of Schools, St. Louis, Mo., and T. M. Balliet, Superintendent of Schools, Springfield, Mass., to recommend a list of words with simplified spelling for use in the published proceedings of the department. The report of the committee was duly made and the spelling so authorized was used in the published proceedings of the meeting of the department held in Chattanooga, Tenn., February 22–24, 1898. At a meeting of the Board of Directors of the National Educational Association held in Washington, D. C., July 7, 1898, the action of the Department of Superintendence was approved and the list of words with simplified spelling adopted for use in all publications of the National Educational Association as follows: Program (programme), tho (though), altho (although), thoro (thorough), thorofare (thoroughfare), thru (through), thruout (througout), catalog (catalogue), prolog (prologue), decalog (decalogue), demagog (demagogue), pedagog (pedagogue).

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, October 25, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 72, scarlatina 38, measles 8, typhoid fever 24.

BOSTON SOCIETY OF MEDICAL SCIENCES. — A meeting of the Society was held at the Harvard Medical School, Tuesday, October 24th. Dr. G. Hay read a paper with the title "A Curious Relation between the Positions as given by Dr. Weiland, of Two Linear After Images, Studied in Connection with the Law of Listig, and the Corresponding Angles of Two Pairs of Great-Circle Planes, as given by Helmholtz." Dr. Thomas Dwight spoke on anatomical additions to the Warren Museum of the Harvard Medical School, with special reference to a series of spinal columns, showing more or less constant anomalies, sufficient, in his opinion, for a classification into definite groups.

SCARLET FEVER AT WALTHAM. — Scarlet fever is reported as having appeared in Waltham, Mass., which has led to the closing of one of the schools.

LECTURES ON EDIBLE AND POISONOUS FUNGI. — A course of six lectures, under the auspices of the Lowell Institute, will be delivered by Prof. William G. Farlow, of Harvard University, on Tuesdays and Fridays at 7.45 P. M., beginning Tuesday, October 24th, on "Edible and Poisonous Fungi and their Allies;" (1) General Characteristics of the Larger Fungi. (2) Basidiomycetes; Classification. (3) Mushrooms and their Allies. (4) Poisonous Fungi. (5) Morels and Truffles. (6) Esthetics of Fungus-eating.

NEW YORK.

STATE CARE OF CONSUMPTIVES. — At a meeting of the Section on General Medicine of the New York Academy of Medicine held October 17th there was a discussion on "The State Care of Consumptives," which was opened by a paper by Dr. Alfred Meyer, in the course of which he gave an account of the Massachusetts State Hospital for Tuberculosis. On the list of speakers were Dr. Lawrence F. Flick, President of the Pennsylvania Society for the Prevention of Tuberculosis; Dr. Daniel Lewis, President of the New York State Board of Health; Edward T. Devine, General Secretary of the Charity Organization Society; Dr. Wm. H. Thomson, President of the New York Academy of Medicine; Dr. Vincent Y. Bowditch, of Boston; Dr. S. Solis Cohen, of Philadelphia; Dr. John H. Pryor, of Buffalo; Drs. George F. Shrady, Andrew H. Smith and J. W. Gleitsmann, and a number of other prominent physicians and officials of societies.

TYPHUS FEVER. — The United States Commissioner of Immigration at Philadelphia recently notified the State Board of Health that seven persons who had landed from the steamer *Aragonia*, from Antwerp, among whose passengers a number of cases of typhus fever had developed, had come on to New York. The facts of the case were at once communicated to the City Health Department, and the latter has been able to trace all the individuals but one. It is stated that three have returned to Philadelphia and that the other three (all of whom are thus far in good health) are being kept under surveillance.

ST. LUKE'S HOSPITAL. — The reports read at the annual meeting of the Society of St. Luke's Hospital, which was held on October 18th, show that during the year ending September 30, 1899, 2,703 patients had been treated in the hospital, 507 of whom paid full rates, 234 paid part rates, and 1,862 were non-paying. The outlay for the year for charitable work by the hospital, and by its patrons through the hospital, was

$133,164, and the total expenses of the institution, $167,910. Gifts and donations for the endowment of the hospital were received to the amount of $227,750, but there was a deficit of current receipts to meet current expenses of $68,648. During the year Dr. William C. Campbell, one of the attending physicians, died, and Dr. Egbert LeFevre was elected to fill the vacancy thus caused.

Loomis Dispensary for Consumptive Incurables. — The Loomis Branch Hospital and Dispensary for Consumptive Incurables is said to be so badly in need of funds that it may have to be closed. While the Liberty Sanitarium (whose administration building was recently burned), which admits only incipient cases, charges from $12 to $25 per week for rooms, the work of the city branch for incurable cases is almost wholly charitable.

London's Insane as Compared with that of New York. — Recent statistics published by the London County Council show that the number of insane in the public asylums of the City of London constitutes a larger proportion of the population than is the case in New York State. The total number of insane is given at 14,000, while, according to the last report of the New York State Commission in Lunacy, the number of insane in the public institutions of the entire State, with a population nearly twice as great as London, is 21,000. The statistics also show a greater relative increase of the insane than in New York.

Lectures at the New York Skin and Cancer Hospital. — The governors of the New York Skin and Cancer Hospital announce that a series of clinical lectures on diseases of the skin will be given by Dr. L. Duncan Bulkley on Wednesday afternoon, beginning November 1st. The lectures will be given in the out-patient hall of the hospital, and are free to members of the medical profession.

Reception at the New York Academy of Medicine. — A reception given by the President and Council of the New York State Medical Association for Prof. William W. Keen, William Osler and Reginald H. Fitz, was held at the New York Academy of Medicine, October 25th. These gentlemen took a prominent part in the discussion on typhoid fever at the afternoon session of the Association that same day.

An Important Decision. — A case of considerable interest to medical men has recently been ordered to be retried by the Appellate Term of the Supreme Court. A bill of two homeopathic physicians, of $70 for the attendant, and $175 for the consultant (who made six visits), in a case of fractured elbow, was disputed by the patient, who was left with a stiff joint and interposed with a counter-claim for $500 damages for malpractice. In the Sixth Municipal Court the full amount of the bill was awarded the physicians. In giving his opinion in favor of reversal, Justice McLean, of the Supreme Court, concluded as follows: "There was no justification by custom or otherwise in plaintiff's employment of Dr. Roberts (the consultant) without a frank and full statement of the situation to the patient and the defendant (the patient's husband), and learning their wishes concerning the professional persons to be brought in. There cannot be properly applied to the facts shown here any custom multiplying ordinary professional charges five or ten times under the shield of a layman's ignorance, because it is subversive of justice that charges should be so largely increased by a custom not made known at all to the patient or to her husband."

ARMY NOTES.

Hospital Accommodations, Medical Officers, Nurses in the Philippines. — On October 10th Chief Surgeon Woodhull cabled from Manila requesting that 20 medical officers and 30 female nurses be sent to the Philippines, adding that he could use twice as many. General Sternberg replied that 13 commissioned medical officers and 40 contract surgeons were already on their way to Manila, or under orders thereto; this being in addition to the regimental surgeons going with the newly organized volunteer regiments. The 30 female nurses asked for were immediately ordered and will leave New York on the several transports sailing early in November. The question of hospital accommodations in anticipation of the needs of the enlarged army in the islands has been settled by the erection of frame bamboo hospitals and the use of hospital tents. The preparations now being made by the medical department contemplate provision for 8,000 sick and convalescent. There are now in the Philippines nearly 2,000 hospital-corps men, a number of Chinamen being employed to act as litter bearers and to perform the heavier work. The number of enlisted hospital corps men will be increased to 3,000 before the beginning of active hostilities.

Assistant Surgeon Wounded. — In the recent fight at Angeles on October 16th, Acting Assistant Surgeon H. Eugene Stafford, U. S. Army, received a wound of the breast, reported, however, as not being serious in character. This is the third instance in two weeks in which a medical officer has been wounded, showing that the medical men are keeping well up on the firing line with their combatant brethren, while at the same time their position as non-combatants is not respected by the insurgents.

United States Transport "Thomas." — The United States transport *Thomas*, the finest troopship afloat, is now fitting out in New York, preparatory to starting for Manila with volunteer troops. Including soldiers, officers, nurses and crew, she has accommodations for over 2,000 persons. For sleeping accommodations, she is fitted up with woven-wire mattress bunks arranged in tiers of three, providing in this way for 1,653 privates and non-commissioned officers. She is

fitted out with an ice machine having a capacity of two tons daily and also a condensing apparatus having a capacity of 10,000 gallons a day. There is an outfit for the manufacture of aërated waters, a bakery, steam laundry and cold-storage plant. She is equipped with a large and well appointed hospital, having provision for the isolation of contagious cases.

Miscellany.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE, PARIS, AUGUST 3 TO 9, 1900.

The American Committee of the Thirteenth International Medical Congress met at the University Club, Philadelphia, October 21st, at 3 P. M., at the call of Dr. William Osler. Present, Dr. W. W. Keen, President of the American Medical Association (in the chair); Dr. Geo. M. Sternberg, Surgeon-General of the United States Army; Dr. Wm. K. Van Reypen, Surgeon-General of the United States Navy; Dr. Walter Wyman, Surgeon-General of the United States Marine-Hospital Service; Dr. Horace G. Miller, President of the American Otological Society; Dr. E. D. Fisher, President of the American Neurological Association; Dr. Geo. Engelmann, President of the American Gynecological Society; Dr. H. W. Stelwagon, President of the American Dermatological Association; Dr. Samuel Johnston, President of the American Laryngological Association; Dr. R. F. Weir, President of the American Surgical Association; Dr. A. Jacobi, President of the American Climatological Association; Dr. E. G. Janeway, President of the Association of American Physicians, and Dr. Henry Koplik, President of the American Pediatric Society.

Letters of regret at inability to attend the meeting were reported from Dr. H. P. Bowditch, President of the Congress of American Physicians and Surgeons (absent in Europe); Dr. O. F. Wadsworth, President of the American Ophthalmological Society; Dr. James Bell, President of the American Association of Genito-Urinary Surgeons; Dr. H. M. Sherman, President of the American Orthopedic Association; Dr. R. H. Chittenden, President of the American Physiological Society; Dr. B. G. Wilder, President of the Association of American Anatomists; and Dr. B. Holly Smith, President of the American Dental Association.

Dr. Osler stated that in May he had received instructions from the Secretary of the Congress in Paris to organize the American National Committee. After consultation with Dr. W. W. Keen, the President of the American Medical Association, and Dr. H. P. Bowditch, the President of the Congress of American Physicians and Surgeons, he had nominated as members of the Committee the Presidents of the American Medical Association, of the Congress of American Physicians and Surgeons, and of the constituent societies composing the same, the Surgeons-General of the Army, of the Navy, and of the Marine-Hospital Service, and, at Dr. Keen's suggestion, the President of the American Dental Association.

Dr. Sternberg moved, seconded by Dr. R. F. Weir, that the American Committee of the Thirteenth International Medical Congress consist of the gentlemen just named. Carried.

Dr. Osler then read the following letter of instruction, which he had received from Dr. Chauffard, the General Secretary:

Honored Colleague:

I have the honor to state that I have sent you (1) a package of subscription blanks ("Forms of Adhesion"); (2) some account books with stubs.

1. *Subscription blanks* ("*Forms of Adhesion*"). — Please distribute these blanks as widely as possible, sending them to universities, hospitals, learned societies, in a word, wherever you deem it possible to obtain subscribers to the Congress.

We have thought it wise to prepare these blanks in such form that they may be of a uniform type for all countries, which will facilitate the task of classification of the members.

Please insist that your fellow-countrymen conform to all the directions which are therein contained. Pray distribute, together with our subscription blanks, announcements of your own, indicating the name and address of the representative of your committee to whom the subscribers in your country should address the subscription blanks when filled, as well as the corresponding funds. These subscription blanks should be collated by you and sent to us in groups of fifty, with the visiting cards and the corresponding stubs of the record book (*vide infra*).

It is then understood that these blanks constitute simply a sort of propaganda, and that we shall consider as members of the Congress only those gentlemen who shall have sent to your committee the amount of their subscription, and shall have received in exchange the receipt from your account book (leaflet C).

2. *Account books.* — The three account books which we have sent you (series 171 to series 173) represent each fifty subscriptions to the Congress. We would call your attention especially to the detailed directions which appear on the first page of the book.

The stubs of this book (leaflets A and B), which serve us at the same time for registration of the members and for our financial accounts, we beg you to fill out as legibly as possible, and not to forget to place the stamp of your committee at the point indicated on each of the three leaflets. This stamp will eventually indicate to us the origin of each inscription.

This is but the first instalment, and we shall be able to send you, if it be necessary, new account books as soon as you may request them. We beg you to send us the stubs as soon as each of the account books is filled, together with the amount of the corresponding subscription and the filled subscription blanks.

We trust that these account books will facilitate the laborious task in which you have kindly lent us your assistance. Pray understand that we are entirely at your service to furnish you any further explanations which you may desire concerning our registration of members.

Yours, etc.,

A. Chauffard, *Secretary-General.*

It will thus be seen that the work of each national committee of this Congress is very different from that heretofore intrusted to them. Physicians in this country who wish to become members of the Congress must apply to the Secretary of the National Committee, who will forward a blank of application, which is to be filled in and returned to the Secretary, with a fee of five dollars.

Dr. Janeway moved, seconded by Dr. Wyman, that Dr. Osler be empowered to appoint a physician as secretary to the Committee, and to secure such aid as would be required to carry on the work. The question of meeting the expenses of the Committee was left to the chairman. If each national committee is expected to meet its own expenses, it was agreed either to call upon the treasurers of the societies

represented in the committee, or upon the individual members.

It was moved by Dr. Engelmann, seconded by Dr. Stelwagon, that the medical journals of the country be requested to aid in making known as widely as possible the conditions under which registration in the Congress may be effected.

While it is to be understood that the Central Committee wishes the subscriptions to be sent to the Secretary of the National Committee, Rule 3 of the Congress provides that persons wishing to be members may forward their subscriptions to the Treasurer-General of the Congress.

Dr. Osler announced that he would nominate Dr. Henry Barton Jacobs, 3 West Franklin Street, Baltimore, Md., as Secretary of the Committee, to whom all applications for blanks should be sent.

PERFORATION IN TYPHOID FEVER; OPERATION; RECOVERY.

IN the *Lancet* for October 16th Dr. Herbert P. Hawkins and Dr. E. O. Thurston report a case of perforation in typhoid fever, with complete recovery after operation. The patient was a child of eleven, who, at about the fortieth day of her illness, gave unmistakable signs of perforation and peritonitis. The operation was done at once and a perforation found on the anterior cecal wall. The writers give the following description:

"The orifice was about one-eighth of an inch in diameter; it was surrounded by a zone of indurated tissue, and through it a little gas was escaping. A thin layer from the margin of the aperture was excised. It was then closed by a row of Lembert sutures, which produced good inversion of the edges, and a few reinforcing sutures were also passed."

Improvement was slow, but, in general, progressive. Two and a half months after the operation the temperature became normal, and now, a year after the onset of the illness, the patient is well, and has no sign of abdominal disease.

Correspondence.

DR. ROSSE ON GOLF.

WASHINGTON, October 16, 1899.

MR. EDITOR: — The article reproduced from the *Medical Press*[1] being somewhat misleading, kindly allow me to say that I plead guilty to being addicted to the "ways and habits" of my Anglo-Scotch ancestry, which is the natural outcome of heredity and mesological circumstances rather than of any affectation on my part.

I cannot say, however, that I am "evidently new to the game and know little of its history," since a considerable residence in Edinburgh as far back as 1875 made me more or less familiar with golf long before it became a fad in the United States, or even south of the Tweed, as for that matter, while the bibliography has claimed more than usual personal attention for a number of years in such places as the British Museum, the Library of Congress, and the Library of the Surgeon General's Office in Washington.

At the time my paper was written, some two years ago, I could not find after diligent search other than the most meagre reports of golf accidents, such as callosity of the palms of the hands, and of gluteal strain in beginners owing to unaccustomed attitude and unskilful mode adopted in "driving." I learned, however, of a golf fatality at Dumfries, Scotland, the subject being a lad of thirteen, who was struck on the head by a player. Since then I have investigated a few cases of so-called "golf-elbow," which appear to be a nervous affection classed with copodycinesia, and having no more relation to golf than hephistic paralysis, piano-player's cramp, or the "Charley horse" of baseball players. Cases of "trigger finger" attributable to golf may also be placed in the doubtful category, since the majority of persons thus affected do not play golf, and indeed the last case I saw was in a naval officer who is not a golfer.

Having spent the last winter in London, I learned of a fatal accident to a swallow from a golf ball that had been driven into a flock happening to pass by. Another golf ball, driven with great impetus from the "tee," killed a sheep up in Scotland, and a medical friend tells me of a golf fatality to a person in this country, but the particulars he was able to furnish as to time, place, and the like, being about as meagre as serious accidents from golf are infrequent, I mention the occurrence merely for what it is worth.

IRVING C. ROSSE, M.D.

[1] Boston Medical and Surgical Journal, October 12, 1899.

DR. BRIGHAM'S EXTIRPATION OF THE STOMACH.

SAN FRANCISCO, CAL., October 16, 1899.

MR. EDITOR: — I think that you will be pleased to hear of the continued wellbeing of Mrs. Maggini, the patient whose stomach I removed.[1] It is now nearly twenty months since the operation and there is no sign of a recurrence of the disease (carcinoma). Since she left the hospital there has been no restriction whatever as to her food. She eats what she pleases, she keeps house herself, visits her relatives and friends, takes her grandchildren to ride in the cars, and a short time ago when the California troops came home from Manila she witnessed the parade, her face beaming with pleasure. That evening the entire city was illuminated, and after driving around the streets she returned home at half-past one in the morning, feeling none the worse for the excitement. Last month I sent her some trout from Lake Tahoe, and her daughter wrote: "Mother says that since she left the old country (Switzerland) she has never tasted fish that was so sweet and delicious; it seemed as if she were back there once again." Last spring she weighed 110 pounds; she now weighs 112 pounds — a slight gain during the summer. She is now in her sixty-eighth year.

Very truly yours,

CHARLES B. BRIGHAM, M.D.

[1] Boston Medical and Surgical Journal, May 5, 1898.

METEOROLOGICAL RECORD

For the week ending October 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily means.	Daily mean.	Maximum.	Minimum.	6.00 A. M.	6.00 P. M.	Daily mean.	6.00 A. M.	6.00 P. M.	6.00 A. M.	6.00 P. M.	6.00 A. M.	6.00 P. M.	
S...8	30.22	48	54	41	79	83	81	N.W.	E.	4	10	O.	F.	
M...9	30.06	52	54	50	98	93	96	N.E.	N.	14	8	T.	O.	.55
T...10	30.25	55	61	49	92	82	87	N.W.	S.	6	4	O.	C.	
W..11	30.27	56	66	46	96	86	91	W.	S.W.	6	11	G.	F.	
T...12	30.18	64	70	59	89	78	84	W.	S.W.	5	8	O.	C.	
F...13	30.28	60	66	54	86	93	90	N.	E.	4	6	O.	C.	
S...14	30.30	64	77	52	94	85	90	S.W.	S.W.	7	16	O.	C.	

☞

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 14, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	—	—	—	—	—	—	—
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,249,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	186	59	14.58	15.66	3.24	4.32	5.40
Baltimore	506,389	204	—	13.23	9.80	4.41	1.96	5.39
Cincinnati	405,000	98	—	6.00	11.00	—	—	2.00
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	108	35	23.00	3.68	9.20	3.28	2.76
Washington	277,000	139	32	22.32	8.64	5.04	9.36	7.20
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	53	24	16.72	16.92	11.28	1.88	1.88
Nashville	87,754	31	8	22.61	6.46	3.23	9.69	—
Charleston	65,165	27	3	22.20	11.10	18.50	—	—
Worcester	111,732	34	17	17.64	8.82	—	2.94	8.82
Fall River	103,142	—	—	—	—	—	—	—
Cambridge	92,520	28	10	21.42	3.57	3.57	—	14.28
Lowell	90,114	34	12	11.76	11.76	8.82	—	2.94
New Bedford	70,511	17	8	5.88	17.64	5.88	—	—
Lynn	68,218	—	—	—	—	—	—	—
Somerville	64,394	—	—	—	—	—	—	—
Lawrence	59,072	13	11	—	6.79	—	—	—
Springfield	58,268	21	7	33.33	4.76	4.76	—	23.80
Holyoke	44,510	17	5	17.64	17.64	5.88	—	5.88
Brockton	38,759	4	1	25.00	—	—	—	25.00
Salem	37,723	12	7	8.33	—	—	—	8.33
Malden	36,421	10	4	—	—	—	—	—
Chelsea	34,235	5	1	20.00	—	—	—	—
Haverhill	32,651	6	2	16.66	16.66	—	—	16.66
Gloucester	31,428	—	—	—	—	—	—	—
Fitchburg	30,523	5	—	20.00	—	—	—	—
Newton	30,461	13	5	6.79	6.79	6.79	—	—
Taunton	28,527	13	4	6.79	20.37	6.79	—	—
Everett	28,102	6	2	50.00	16.66	—	—	33.33
Quincy	24,578	6	3	50.00	—	—	33.33	—
Pittsfield	23,471	3	—	—	66.66	—	—	—
Waltham	22,791	2	—	—	50.00	—	—	—
North Adams	21,583	7	1	—	14.28	—	—	—
Chicopee	18,316	7	5	14.28	—	14.28	—	—
Medford	17,190	2	1	—	—	—	—	—
Newburyport	15,036	1	—	—	—	—	—	—
Melrose	14,721	2	—	—	—	—	—	—

Deaths reported 1,130; under five years of age 270; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 182, consumption 117, acute lung diseases 80, diphtheria and croup 57, diarrheal diseases 49, typhoid fever 47, cerebro-spinal meningitis 13, whooping-cough 7, scarlet fever 3, malarial fever 3, measles 2, small-pox 1.

From whooping-cough Boston and Pittsburg 2 each, Washington, Providence and Nashville 1 each. From cerebro-spinal meningitis Baltimore, Cincinnati, Worcester and Amesbury 2 each, Boston, Charleston, Cambridge, Springfield and Quincy 1 each. From scarlet fever Cincinnati, Holyoke and Chelsea 1 each. From malarial fever Nashville 2, Baltimore 1. From measles Cincinnati and Pittsburg 1 each. From small-pox Everett 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 30th, the death-rate was 19.1. Deaths reported 4,186; acute diseases of the respiratory organs (London) 156, diarrhea 411, diphtheria 95, fever 84, whooping-cough 61, measles 33, scarlet fever 27, small-pox (Hull) 1.

The death-rates ranged from 12.6 in Bedford to 27.9 in Preston; Birmingham 23.0, Bolton 22.5, Cardiff 16.6, Gateshead 20.1, Hull 25.8, Leeds 20.1, Liverpool 26.5, London 16.7, Manchester 25.1, Newcastle-on-Tyne 23.3, Nottingham 21.3, Portsmouth 17.8, Sheffield 24.5, West Ham 16.3.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 7th, the death-rate was 18.8. Deaths reported 4,104: acute diseases of the respiratory organs (London) 215, diarrhea 233, diphtheria 113, fever 80, measles 45, whooping-cough 42, scarlet fever 22.

The death-rates ranged from 12.1 in Swansea to 25.3 in Salford; Birmingham 20.4, Bradford 16.3, Cardiff 16.3, Gateshead 17.1, Huddersfield 13.6, Leeds 19.1, Liverpool 24.7, London 17.9, Manchester 24.0, Newcastle-on-Tyne 24.2, Nottingham 17.4, Portsmouth 16.9, Sheffield 22.4.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The Surgical Section will meet Wednesday evening, November 1st, at 8 o'clock, in Lecture Room C of the Harvard Medical School.

Dr. J. C. Warren will demonstrate on the cadaver "Allis's Method of Reducing a Dislocation of the Hip," and will show a "Dissection of the Shoulder Explaining the Action of Kocher's Method."

Dr. F. B. Lund: "A Case of Perforating Gastric Ulcer; Operation; Recovery."

RECENT DEATHS.

ISAIAH HUTCHINS, M.D., M.M.S.S., died in West Acton, August 8, 1899, aged sixty-nine years.

JAMES AUGUSTIN MCLAUGHLIN, M.D., M.M.S.S., of Boston, died September 8, 1899, aged eighty-five years.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 21, 1899.

O. D. NORTON, surgeon, detached from the "Badger" when put out of commission and ordered to temporary duty on the "Ranger"; on arrival at the Asiatic Station ordered to the "Monadnock."

L. L. YOUNG, passed assistant surgeon, ordered to be examined at the Mare Island Navy Yard, October 24th, chapter 15, title 3, thence home and to wait orders.

J. STOUGHTON, passed assistant surgeon, detached from the "Monadnock," when relieved, and ordered to the "Bennington."

J. J. SNYDER, assistant surgeon, ordered to the "New Orleans," October 18th.

D. G. BEARE, assistant surgeon, detached from the "Bennington," when relieved, and ordered to the "Ranger."

J. C. ROSENBLEUTH, passed assistant surgeon, detached from treatment at the Naval Hospital, Chelsea, Mass., and granted sick leave for one month.

R. W. PLUMMER, assistant surgeon, detached from the hospital, New York Navy Yard, and ordered to temporary duty on the "New Orleans" for passage to the Asiatic Station.

H. D. WILSON, passed assistant surgeon, directed to proceed home and to wait orders. Order of October 17th modified; detached from duty on the "Solace."

H. T. PERCY, surgeon, detached from the "Olympia," when put out of commission, and ordered home and to wait orders.

D. H. CARPENTER, assistant surgeon, detached from the "Olympia," when put out of commission, and ordered home and to wait orders.

A. HAMMAR, pharmacist, detached from the "Olympia," when put out of commission, and ordered to the Mare Island Navy Yard.

E. THOMPSON, assistant surgeon, detached from the "Manila" and ordered to the "Celtic."

W. E. HIGH, assistant surgeon, detached from the "Celtic" and ordered to the "Manila."

H. H. HAAS, assistant surgeon, detached from treatment at Naval Hospital, Yokohama, Japan, and ordered to the "Baltimore."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING OCTOBER 20, 1899.

WASDIN, EUGENE, surgeon. To proceed to Berlin, Germany, for special temporary duty. October 13, 1899.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Montezuma, Ga., for special temporary duty. October 13, 1899.

DECKER, C. E., assistant surgeon. Relieved from "waiting orders" and placed on duty to date from October 7, 1899. October 11, 1899.

APPOINTMENT.

FRANK BOYD, of Kentucky, to be acting assistant surgeon, for duty at Paducah, Ky. September 27, 1899.

BOOKS AND PAMPHLETS RECEIVED.

The Forcible Straightening of Tubercular Kyphosis, with Second Report of First Three Cases: also Report of Three Subsequent Cases. By Justin Kay Toles, Los Angeles, Cal. Reprint. 1899.

The Treatment of Pelvic Inflammations through the Vagina. By William R. Pryor, M.D., Professor of Gynecology, New York Polyclinic, etc. With 110 illustrations. Philadelphia: W. B. Saunders. 1899.

Claude Bernard. By Michael Foster, M.A., M.D., D.C.L., etc., Secretary of the Royal Society of London; Professor of Physiology in the University of Cambridge. New York: Longmans, Green & Co. 1899.

Original Articles.

ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE SURGICAL INTERVENTION.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

(Concluded from No. 17, p. 408.)

THE bacteriology of acute abdominal lesions, as suggested by the temperature, has, I believe, an interesting and valuable future. As far as interpretation of signs goes, little more can be said than what I have already outlined.

Rigidity is a symptom of great value in the early hours of acute abdominal lesions. More than any other one sign, rigidity, accompanying pain, confirms the fear of a peritoneal infection. It may be extreme and extensive; it may be limited to one-half the abdomen. It always means an involuntary effort at protection to parts beneath. When accompanied by tenderness this symptom has a greatly increased value, for rigidity is sometimes involuntary in the well.

Tenderness is of great importance. In many cases it is general when the cause is strictly local. In appendicitis, for instance, a general tenderness accompanies a local infection, though the tenderness, like the pain, quickly becomes localized.

An increase in the area of tenderness and rigidity is always alarming, especially if accompanied by distention. Distention is a symptom which demands intervention when preceded or accompanied by other signs of severe abdominal lesions. This sign is ominous of general peritonitis.

This discussion, it must be remembered, is rather of the incipient and curable lesions than of the fully established and hopeless. I may say in passing, however, the latter are so easily recognized that there is little hesitation in deciding the question of operation. It is hoped that the time is not far distant when the significance of symptoms will be apparent long before distention and other glaring signs have had time to appear.

To return to the initial hours of these fatal diseases, we must now consider the significance of nausea and vomiting. In practically all of them pain is accompanied by vomiting. After operation, no symptom can be more ominous; with many acute lesions, none can be more suggestive. Unfortunately for the rating of its value, hardly any acute abdominal disease, no matter how trivial it may be, is, at one time or another, without it. It is therefore difficult to estimate the value of vomiting. As a symptom by itself it means nothing; with pain and diarrhea it means little; with symptoms of abdominal infection it too often means impending death. At the inception of organic lesions requiring surgical treatment, the contents of the stomach alone are vomited; in acute infection the contents first of the upper bowel; later, of the lower coils. In general infections the vomitus is coffee-colored. Violent retching is less to be feared than easy regurgitation. On the whole, vomiting is a confirmatory, not a positive, sign. Pain, nausea, vomiting, rigidity, tenderness, shock followed by reaction, are conspicuous in the early hours of acute abdominal lesions, and when seen together usually demand immediate intervention.

The diagnosis in the initial stages is generally doubtful; indeed, one object in this paper is to consider the value of symptoms alone as a guide to intervention; for, with a positive diagnosis, the treatment of many, if not all, abdominal lesions has been clearly determined. It is the fear of subjecting the patient to an unnecessary operation, which may be fatal, that makes the surgeon hesitate in coming to a decision; yet, when I weigh the few deaths from unnecessary intervention with the hundreds from unnecessary delay, it seems to me that we must be on our guard lest this fear influence us unduly. Unfortunately, one death in a community from an unnecessary operation is so conspicuous, its effects so disastrous both to surgery itself and to the surgeon, that one cannot easily exaggerate the gravity of such a mistake.[2] On the other hand, a necessary operation not performed, a withholding of perhaps the only chance, sacrifices a life just the same; but the effect in the community is comparatively slight, the influence upon surgery and upon the surgeon comparatively insignificant. I emphasize this feeling because from experience I have known its great force.

When we have sudden abdominal pain, with shock, rising pulse, lowered temperature, pallor, restlessness, thirst, especially in a woman of child-bearing age, we must suspect hemorrhage unless the history and physical signs suggest some other lesion. Irregularity in menstruation, changes in the breasts, add probability to the diagnosis of extra-uterine pregnancy. In males abdominal hemorrhage is so rare, that, occurring in perfect health, symptoms pointing to hemorrhage can suggest only a ruptured vein or artery, an intestinal or gastric ulcer. Arising in the course of typhoid fever, or other diseases, hemorrhage causes no pain. The chief symptom is falling or subnormal temperature.

After abdominal operations, in the course of gastric disorders, concomitant with injuries, these signs cannot be misunderstood.

Pain, nausea, vomiting, tenderness, rigidity and

[1] An oration before the Maine Medical Association, June 8, 1899.

[2] To illustrate the difficulties of diagnosis and the mistakes that may occur in the interpretation of symptoms, to emphasize the harm that may be done by unnecessary exploration, I would recall the remarks with which I prefaced the reading of this paper. Referring to the importance of the subject, the frequency of disaster, the loss of precious time, for which the physician too often is responsible, I mentioned a case which I had examined the night before leaving Boston. This was the case of a man of forty-eight, who four weeks before had received a simple fracture of both bones of the left leg. The day following the application of plaster, May 30, 1899, three weeks after the accident and eight days before my examination, June 7, 1899, he was seized with severe pain in the region of the diaphragm on the right side. In thirty-six hours the pain moved to the same level on the left side. The respiration was 35, the temperature 100°, the pulse 106. He was supposed to have pneumonia. Two days before my visit he began to vomit,—at first greenish fluid, then black, then black mixed with bright blood. The abdomen became excessively distended. The attending physician felt a mass on June 5th in the right hypochondrium. I found the abdomen very much distended, and everywhere tympanitic. There was no dulness or tumor in the tender and painful epigastrium. He was regurgitating black vomitus at frequent intervals. The temperature was 100.4°, the pulse 148, of poor quality. Some gurgling was heard in the intestine. In front nothing abnormal could be detected in the lungs. It was impossible to examine the back.

Here was a man showing acute abdominal symptoms to a marked degree — vomiting, distention, tenderness, with extreme constitutional depression, a history of diaphragmatic pain, rigidity and tumor coming on three weeks after a simple fracture of the leg. The lesion was supposed at first to be pulmonary until the symptoms became conspicuously abdominal. In referring to this case I said that it was an illustration of the importance of the subject which I had selected. A robust man, comparatively young, was dying with acute abdominal symptoms, which, had we known enough, might have been prevented by early intervention. On my return to Boston I found that the man had died on the following day. At the autopsy it was found that *the abdomen was perfectly normal*. The cause of death was multiple infarction of the lungs. Had the patient's strength permitted, I should have opened the abdomen, expecting to find some lesion above the navel — an acute pancreatitis or a subphrenic abscess. I have seen three cases of acute abdominal pain suggesting acute appendicitis in which the lesion was pneumonia. Excepting the foregoing case, they all occurred in children.

shock, occurring without signs of hemorrhage, especially in males, suggest, first, appendicitis, if the pain is epigastric. If it becomes quickly localized in the right iliac fossa, appendicitis is almost surely the lesion; indeed, if one should assume that doubtful lesions were appendicitis, he would be right in the great majority of cases. If the attack has been preceded by history of gastric disturbances, one must be on the lookout for perforating gastric ulcer; if by a history of gall-stones, an acute cholecystitis. The other rare epigastric lesions may be eliminated from their very rarity; the localization of pain above the umbilicus will guide the exploring knife into close proximity with the lesion.

Pain beginning low down in the abdomen in women suggests, first, some acute lesion of the pelvic viscera, chief among which is salpingitis. With a history of previous pelvic pain, abortion, miscarriages, uterine inflammations, gonorrhea, the tubes may be suspected, though the appendix is very frequently the real seat of the lesion, especially if the symptoms incline rather to the right side than to the left. Under ether, the exact pelvic condition can often be recognized. Fortunately, no mistake is likely to occur if the incision is made well to the right side through the rectus.

Pelvic symptoms caused by ovarian tumor with twisted pedicle can usually be clearly distinguished, even without ether, though at times the diagnosis is difficult.

In cases of ruptured abscesses, of injuries, and of gunshot wounds, a previous history will point with more or less certainty to the lesions. It is not so difficult, therefore, in many cases, even in the earliest hours of an emergency, to give a good guess as to the probable lesion.

When the symptoms are chiefly those of acute obstruction, the diagnosis is much more indefinite, for many of the manifestations of acute sepsis suggest acute obstruction. Even in the early hours, the intestinal movements may be entirely suppressed, and vomiting of the contents of the stomach and upper bowel may suggest in the strongest way an acute intestinal obstruction. This may occur even before a general infection has taken place. Whatever we may say, from theory, as to the impossibility of the early symptoms of extravasations resembling those of an acute obstruction, it must be replied that experience abundantly teaches that this resemblance not only occurs, but it may be so exact as to make discrimination between a beginning sepsis and an acute obstruction impossible. Were it possible so to discriminate in the early hours discussion would be unnecessary — one would know just what to do and when to do it.

Symptoms really caused by obstruction are among the most ominous and urgent, if only their weight can be measured. Acute obstructions, due to lesions necessarily causing gangrene, differ at first very little from those dependent upon less serious causes; but the former must be operated upon at once, the latter may wait a considerable time.

In general, the pain of obstruction is paroxysmal and intermittent. Shock may be slight, fever is absent. Vomiting is excessive. These signs rapidly increase in severity in both forms of obstruction. To them are added the symptoms of beginning gangrene — local and general infections usually fulminating and rapidly fatal.

In the initial stages the chances favor obstruction if the pain continues paroxysmal and localized. If distention ensues, and if resistant coils can be felt, if vomiting becomes rapidly stercoraceous, if signs of sepsis supervene, the chances favor an intestinal strangulation, an intussusception, a volvulus, or a mesenteric embolism or thrombosis. With pain still localized, with resistant coils, a history of previous slight attacks and loss of flesh, and with symptoms of simple obstruction, the trouble is, on the chances, the plugging of a small stricture; a stricture which, if the patient is young, is probably simple or tubercular; if middle-aged or old, cancerous. The mechanical obstructions without sepsis, however, may and often do go on for days without serious results. Little is lost by delay. In the acute necrotic processes, however, recovery is possible only in the very earliest hours. Even to-day, when we recognize such lesions as intussusception early, the mortality is excessive.

When we have symptoms of acute obstruction which do not point even indefinitely to the lesion, when, for instance, the pain is epigastric, the vomiting excessive, the obstruction complete, it is impossible to determine the lesion. It would perhaps be a wise rule in such cases to adopt the theory that the lesion is probably the commonest one, and to act upon it, and in the absence of distinct localizing signs to consider all acute cases in the male as appendicitis; in the female, as having their origin in the pelvic organs. This would be by no means a bad rule, if the incisions were made in the right rectus, whence both appendix and pelvic organs could be easily reached.

Though it is often impossible to localize a lesion exactly, it is highly important to place it in the right or the left, the upper or the lower part of the abdomen. As a broad statement, emergencies in the male are right-sided, in the female, below the umbilicus.

Whatever may be said as to the ease of even so indefinite a localization, its importance cannot be exaggerated. To open the abdomen in the left upper quadrant, and to find an acute appendicitis in the right lower; to make a prolonged search of pelvic viscera, and to find an acute cholecystitis; to hunt for a stricture at the ileocecal valve and find one at the splenic flexure — these are some of the mistakes that I can recall in which valuable time was lost. I do not now see how the error could have been avoided, however. Yet in most instances some localizing sign will be present, as shown by the great number of cases in which the exploring finger goes straight to the mark. When there is absolutely nothing to guide us except obscure abdominal symptoms which demand immediate attention, the median line below the umbilicus must be the place chosen for incision, because it is in the lower half of the abdomen that the great majority of acute lesions are situated.

From the foregoing considerations it seems clear that abdominal hemorrhage, sepsis, obstruction suddenly occurring in the apparently well, indicate exploration as soon as positive symptoms are plain, and that at this early period intervention promises success. Acute symptoms occurring in the course of well-recognized diseases likewise may demand immediate operation. Acute symptoms observed for the first time when the lesion which causes them is well advanced often require intervention, though the outlook may be almost hopeless.

Though certain groups of acute symptoms demand immediate intervention, certain others contraindicate

it. I have already mentioned those which show that delay seems on the whole the better plan. It may, however, be well to repeat here the indications for delay. They, of course, apply only to conditions which permit cure under palliation and to not essentially fatal lesions, like acute obstructions and thrombosis. When these lesions are present, the symptoms are always progressive and can hardly be mistaken. Symptoms, however, which show that a peritonitis is evidently successfully localized and subsiding, or that a hemorrhage is arrested, indicate delay, because a more favorable time for intervention will be found by waiting. This is especially the case in suspected appendicitis, because the large majority of patients will recover under medical treatment, and will safely undergo operation in the interval. Moreover, the interval operation presents features not only of safety but of great local advantage — small scar, unweakened abdominal wall — which, it seems to me, justify the slight danger of delay in cases that are improving. I am convinced that many an operation in acute appendicitis is directly fatal by itself, converting a localized into a general infection. Symptoms, therefore, which indicate a decided subsidence in the attack, whether appendicitis or some other local infection be suspected — acute inflammation of the gall-bladder, for example — should be watched for further improvement. If the expected improvement does not come, if things are at a standstill, if after getting better they tend to get worse, then operation is imperative, in spite of its great dangers.

In hemorrhage from extra-uterine pregnancy delay is a great advantage if it can safely be advised, because operations in profound shock are to be avoided when possible. A rising temperature and a falling pulse, with returning color and subsiding pain, indicate an early return of strength, when operation will be almost without doubt successful. When things are at a standstill or getting worse, an infusion of salt solution and an operation of extreme rapidity are demanded. In cases of doubt exploration is indicated. A small incision will show whether the surgeon is on the right track or not, for the moment the peritoneum is nicked, the escape of serum in sepsis, or of blood in hemorrhage, will indicate the necessity for further search. Free fluid, either serum, pus, or blood, is always present in the acute lesions under discussion. Should no serious disease be found, the chances of recovery are but slightly lessened. For one unnecessary operation, a hundred necessary ones would be performed; for one life lost, a hundred would be saved.

What is to be the teaching in the treatment of these emergencies? Shall we advise that when symptoms demand intervention any one shall operate, whatever his experience may have been? After prolonged consideration of this subject, and after years of almost daily observation, I feel that, on the whole, the cases under consideration are best treated medically if the operation is to be in the hands of the totally inexperienced. I say with reluctance, but without hesitation, that unless the operator can bring a certain amount of experience to his aid, experience either in operating himself or in seeing others operate, unless he has been well trained in aseptic surgery, he will have a smaller mortality if he treats acute abdominal lesions medically than if he treats them surgically. Each community should have its experienced surgeon, and to him should be referred the cases both as to diagnosis and as to treatment. Small communities and thinly settled districts do not provide opportunities for a very great experience even if concentrated upon a single man. Many physicians are so situated that from the nature of their surroundings they can never gain that familiarity with abdominal diseases and abdominal surgery which justifies them, except perhaps, in the rarest instances, in opening the abdomen. Operations which beforehand we think will be extremely easy sometimes prove excessively difficult. The plainest case may unexpectedly demand, as the patient's only chance of recovery, resources of skill and daring which only years of experience can give — an apparently simple appendectomy may require resection of the ileocecal valve; a simple ovariotomy, the most difficult and dangerous dissection. Furthermore, these complications usually require the operator to proceed, whatever the difficulties and dangers may be, for to abandon the operation is to abandon the patient to certain death, — operations attended by hemorrhage which can be checked only by complete and rapid extirpation of a tumor; resection of intestines, demanded by contiguous and infiltrating growths; repair of wounded intestines; immediate recognition and control of unexpected and perhaps deeply seated hemorrhage — these are a few examples of the common emergencies which the operator may meet. An experienced man can usually meet them successfully, but occasionally conditions unexpectedly occur which tax the ingenuity and resources of the most experienced — desperate conditions in which something must be done, and there is no time to think; death is a question of seconds. Amid such thrilling complications every operator sooner or later will find himself; the broader his experience the less the likelihood that they will be of his own making and the greater the ease with which he will overcome them.

The plain duty of him who first observes symptoms suggesting acute and serious abdominal lesions is to lose no time. He must determine the probable nature of the lesion and suggest the proper remedy. If he has not the requisite experience in operating, he should call to his aid one who has this experience, and he should call the one nearest at hand; the two together should discuss the possible lesion and the probable prognosis. They should decide as quickly as practicable the question of intervention, whether the diagnosis be made or not. Exploration, if decided upon, may then be conscientiously undertaken, and the result, whatever it may prove, can be attended by no just cause for regrets.

CARCINOMA UNDER THE AGE OF THIRTY.

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

ALTHOUGH carcinoma, generally speaking, is a disease of middle life, statistics have been able to demonstrate that a certain number of cases occurring in early life certainly do arise, and the object of this paper is to report three cases of this disease occurring in individuals under the age of thirty and to report a few cases gathered from the general medical literature. We have recently received, in reply to our inquiry, a letter from our friend, Dr. von Glasser, in which he has been good enough to compile the following table regarding the ages of 527 patients afflicted with carcinoma and on whom an autopsy was performed at the

Pathological Institute of the University of Erlangen from 1862–1893.

Under 20 years of age	1 case	=	0.19%
Between 20 and 30 years of age	16 cases	=	3.30 "
" 30 and 40 " "	47 "	=	8.90 "
" 40 and 50 " "	105 "	=	19.30 "
" 50 and 60 " "	143 "	=	27.10 "
" 60 and 70 " "	149 "	=	28.30 "
" 70 and 80 " "	58 "	=	11.00 "
" 80 and 90 " "	8 "	=	1.50 "

Carcinoma has been rather frequently found afflicting the ovary of young women or even girls, and Olshausen, in his "Handbuch für Frauenkrankheiten," Vol. II, page 434, relates cases occurring in subjects aged respectively twelve, nineteen, twenty-one, twenty-three and twenty-nine years. Out of 48 cases of carcinoma of the ovary he found 16 in subjects under thirty years of age. Leopold reports cases of carcinoma of the ovary in patients aged respectively twelve and one-half, fourteen, seventeen, nineteen and nine months, twenty, twenty-one, twenty-three and twenty-six years, and in another case of a twenty-four-year-old girl the disease was present in both organs.

In a recent book entitled "Études de gynecologie operatoire," by Dr. Phocas, of Lille (Paris, 1899), are to be found five cases of carcinoma of the ovary in children varying in age from seven to fifteen years.

Schroder, on page 341 of his "Lehrbuch der Frauenkrankheiten," gives 83 instances of carcinoma of the uterus under thirty years out of 2,265 cases, and out of 492 cases of carcinoma of the uterus in which an autopsy was performed this same authority found 22 cases in subjects less than thirty years of age. In the Vienna Hospital Reports for 1886, cases of carcinoma uteri occurring in patients aged twenty-one, twenty-four, twenty-five and twenty-eight are reported.

Carcinoma of the breast being an extremely frequent affection, it is interesting to find out how often this occurs in young women. In the London Hospital Reports, Vol. III, will be found the case of a servant girl of twenty years of age, who died at the hospital with a symmetrical carcinoma of the breasts and ovaries. In a statistical table compiled by Bryant, amounting to 600 cases, 25 occurred in subjects under thirty years of age, and Birkett gives 19 cases between the ages of twenty and thirty in the article he has contributed in Holmes's "System of Surgery." Gross collected 642 cases derived from various sources and found that 18 of them occurred between the ages of twenty and thirty. Haycock reports a case of carcinoma in the breast in a single woman twenty-two years old, and Bryant communicated another to Mr. Shield of a young lady of twenty-one from whom he removed a carcinoma of the breast, and who died a year afterwards from a secondary manifestation of the disease in the lung. Of 64 cases of carcinoma of the breast operated on during the last five years at the surgical clinic of Greifswald, two of the patients were under twenty-six years of age. Professor Le Dentu removed a carcinoma from a young lady of twenty-five years.

Of 51 cases of carcinoma of the testicle reported by Ludlow and Lebert, we find that five were in subjects under five years of age, one in a patient fifteen years old, and in 11 patients the disease developed between twenty and thirty years. It is more than probable that some were instances of sarcoma.

Carcinoma is also a frequent neoplasm of the digestive tract, and the stomach alone contributes about 33 per cent. of all cases of carcinoma. Leber found three per cent. out of 314 cases of cancer of the stomach, Hahn out of 166 cases only two per cent., and Reichert found only three per cent. of these cases occurring in subjects under thirty years of age. In a statistic made at the clinic in Zürich, five cases out of 138 occurred in subjects under thirty years, while another series of 120 cases reported from the clinic in Würzburg gave three instances of this affection in subjects under thirty years of age. Scholtz relates the case of carcinoma of the stomach in a girl aged twenty-two, and Scheffer records another in a boy of fourteen years. Hofmann describes a case of this affection in a twenty-year-old soldier, Reinbrecht that of a twenty-one-year-old girl, Muth one of a twenty-four-year-old man, while Burger gives in a statistic of 357 cases of carcinoma of the stomach, 11 of the patients being under thirty years of age.

As to cases of carcinoma of the intestines occurring in subjects under thirty years of age, a certain number have been reported from time to time. The youngest that we know of has been reported by Marchand, and was that of a carcinoma of the rectum in a young girl of sixteen, and Mr. Cripps records another instance in a lad of seventeen. Billroth reports three cases of carcinoma of the intestine in patients between eighteen and twenty years old, while Raspe records a case of carcinoma recti in a woman twenty-eight years old. Sihla reports two cases of carcinoma of the intestine in patients under thirty years of age out of 46 cases which were operated on in Dorpat from 1880 to 1888. Schwieder found three cases of carcinoma of the intestine in patients under thirty years of age out of a total of 49 cases. Burger found nine cases under thirty years of age out of 111 autopsies in which carcinoma of the intestine was found. Von Bary has described a case of a patient aged twenty-five, in which a carcinoma developed from an ulcus durum on the border of the anus. Out of a total of 126 cases of carcinoma of the rectum observed by Kuster, two patients were under the age of twenty years. Professor Rose operated on a case of carcinoma of the rectum in a subject twenty-six years old, while Professor Socin operated on a female of twenty-seven years for a tumor of the colon, which proved on microscopical examination to be a cylinder-cell carcinoma.

The following table compiled by Dr. Boulogne relative to the age at which carcinoma of the intestine has been found is interesting:

From 1 to 9 years of age	5 cases
" 10 to 19 " "	4 "
" 20 to 29 " "	24 "
" 30 to 39 " "	38 "
" 40 to 49 " "	46 "
" 50 to 59 " "	51 "
" 60 to 69 " "	31 "
" 70 to 79 " "	16 "
" 80 to 89 " "	2 "

Here are a few more cases gathered from the literature and classified according to the location of the neoplasm:

CECUM AND ASCENDING COLON.

Male, aged 27 years (Morton: The Lancet, 1895).
Female, aged 24 years (Hofmokl: Wien. med. Presse, 1885).
Male, aged 28 years (Tchouprow: Chirurg. Leitopis, 1893).
Female, aged 25 years (Jacobs: Presse med. Belge, 1895).
Female, aged 14 years (Robson: British Medical Journal, 1895).
Male, aged 24 years (McCosh: Presbyterian Hos. Reports, 1895).
Female, aged 29 years (Shield: British Medical Journal, 1896).
Female, aged 29 years (Rolleston and Shield: Clinical Society Transactions, vol. xxx).

TRANSVERSE COLON AND FLEXURES.

Female, aged 29 years (Eiselsberg: Wien. med. Woch., 1895).
Female, aged 25 years (Laubie and Caetes: J. med. Bordeaux, 1898).

SIGMOID FLEXURE.

Male, aged 28 years (Ferranti: Riv. clin. di Bologna, 1883).

Rose performed an exploratory laparotomy on a subject of twenty-one years; the growth proved to be a carcinoma of the left kidney, with metastases in the retroperitoneal lymphatic glands. Isreal removed the left kidney for carcinoma in a patient twenty-one years old. In an interesting paper on malignant tumors of the kidney Sutton mentions a case of carcinoma of the kidney in a female twenty-eight years of age. The operation was successful, but the patient died a year later from a recurrence of the neoplasm.

In a recent study entitled, "Carcinome unter dreissig Jahren," Seitz related eight unpublished cases of considerable interest which were under observation at the surgical clinic of the University of Munich. The first was a subject twenty-three years old afflicted with a carcinoma of the rectum; the second was a patient twenty-three years old who had a carcinoma of the skin in the left dorsal region; the third was a subject twenty-four years of age, with carcinoma of the rectum; the fourth, also aged twenty-four, carcinoma of the rectum; the fifth, aged twenty-five, had carcinoma of the liver; the sixth was a twenty-seven-year-old subject who had a epithelioma of the lower lip; case seven, also twenty-seven years of age, had a carcinoma of the pylorus; case eight was a twenty-eight-year-old subject, with carcinoma of the breast.

Dr. Fabre-Domergue, in his recent and splendid treatise on "Les cancers epitheliaux" (Paris, 1898), mentions the case of an inoperable epithelioma of the thigh in a man aged thirty. The primary growth was seated on the anterior aspect of the left thigh, ten centimetres from the groin. It was a flattened fungous mass, having a diameter of ten centimetres and projected above the surrounding skin about three centimetres. The surface was reddish and dimpled, and covered with offensive pus. It had been present for fourteen months. In the corresponding groin a metastasis in the glands had taken place, the secondary tumor being the size of an apple; the skin covering it was red and inflamed. All the lymphatics of this region appeared to be more or less indurated.

Carcinoma of the external genitals in young subjects must be very rare, as I have only been able to find three recorded cases. The first was a young woman of twenty-eight years, who was operated on for a carcinoma of the right labium majorum by Professor Socin, of Basel, in 1890. The second case was a male subject aged twenty-four years, who underwent amputation of the penis for an epithelioma of the organ; this case occurred in the service of Professor Weinlechner, of Vienna. The third case was a man aged thirty, with a carcinoma of the penis, the organ being amputated by Professor Rose at that time in Zürich.

As very rare we may mention the case of a female aged thirty years, who was operated on for an epithelioma of the upper lip in the Vienna General Hospital, and a patient of Professor Rose, aged thirty years, who presented a carcinoma of the tongue and submaxillary gland.

To the cases already mentioned I will relate a little more in detail three that have occurred in my practice within the last four years.

Case I. Miss X., age nineteen, was kindly referred by Dr. Charles W. Knowlton, of this city. A year previous to our seeing the patient, she had suffered from a typical attack of gall-stone colic, the symptoms presented being pain in the region of the gall-bladder, yellow skin and conjunctiva, clay-colored stools and anorexia. She recovered from this attack after a few weeks of treatment, and although the calculi were searched for in the stools, none had been found.

We saw the patient in a second attack in May, 1897, and made the following notes: The skin and conjunctiva were of deep yellow; thickly coated tongue and almost complete anorexia. Clay-colored stools. Pulse 60 per minute. Pain in the region of the gall-bladder. Palpation revealed the presence of a large globular tumor in the right hypochondriac region, very sensitive to pressure, and, as near as we could ascertain, might have been the size of a grapefruit. A diagnosis of biliary calculi was made, but on account of the very distinct outline of the mass, it appeared to us that some other affection might possibly be present, more particularly perhaps a hydatid cyst of the liver, and before operating Dr. David W. Cheever and Dr. Edgar Garceau kindly saw the patient in consultation and coincided in the diagnosis of gall-stones.

After putting the patient on a course of medical treatment in order to relieve the jaundiced condition, the patient was prepared for laparotomy, which was done a week or two later. The usual incision parallel with the outer border of the rectus muscle was made, and when the peritoneum was reached the fundus of the gall-bladder was distinctly felt adherent to the serous membrane. The latter was picked up with a rat-tooth forceps and carefully incised to the extent of about four centimetres, and when this opening had been made, it was found that the supposed gall-bladder was adherent over quite an extent to the peritoneum. We carefully separated the organ from the peritoneum all around the edges of our incision into the serous membrane, but, as the organ was nicely walled off, we found that packing with gauze would be unnecessary.

The aspirating needle was slowly introduced for about three or four centimetres, but did not come in contact with any stone, and a vigorous use of the aspirator did not result in the withdrawal of any fluid; several attempts were made, but no gall-stones were encountered by the needle, and nothing but a little dark blood would come away when the latter was withdrawn.

Not understanding the nature of the condition of affairs present, the gall-bladder was separated from the peritoneum, when, to our surprise, in introducing the hand into the peritoneal cavity we found a large mass the size of a fetal head extending from the under surface of the liver and dipping down into the pelvic cavity. Raising up the borders of the abdominal incision with a broad retractor, the cavity was inspected and the gall-bladder was seen in its normal position; it was very small. The supposed gall-bladder was the greatly hypertrophied liver. The diagnosis of carcinoma of the liver, or more probably adenocarcinoma, was made, and the abdominal wound was sutured. The patient died shortly after the operation and no autopsy could be obtained.

Case II. The patient, age twenty-eight years, kindly referred by Dr. Joseph Garland, of Gloucester, Mass. The patient was the mother of two or more children. The last few months she had been complaining of considerable vaginal discharge, which was rather foul-smelling and tinted with blood.

Examination revealed a cauliflower growth on the cervix which invaded the lateral culs-de-sac. The uterus was somewhat enlarged and not very movable. The broad ligaments were considerably infiltrated. No enlargement of the inguinal or supraclavicular. As the disease had extended too far for a radical operation, the growth was freely removed with the scissors and thermocautery. The patient died nine months later from a general metastasis throughout the abdominal viscera. Histological examination of the neoplasm showed it to be epithelioma.

CASE III. A young man, age twenty-four years, applied to the writer, for constipation. He stated that during the last three months he had lost twenty-four pounds. His skin was sallow and his eyes rather sunken. Thoracic organs negative. Palpation of the abdomen revealed the presence of a mass about the size of a lemon in the right iliac region. This growth was painless on pressure. The inguinal glands on the right side were enlarged. Exploratory incision revealed an annular carcinoma of the ascending colon, and the mesentery was actually riddled with secondary lymphatic metastasis. Circular resection of the intestine was done.

The patient died four months later, and histological examination of the intestinal growth showed it to be an ordinary cylinder-cell carcinoma.

Clinical Department.

A CASE OF ADENOCARCINOMA OF THE BODY OF THE UTERUS, SIMULATING SUBMUCOUS FIBROMYOMA.[1]

BY W. L. BURRAGE, M.D., BOSTON.

A. H., forty-eight years old, single, entered St. Elizabeth's Hospital, November 8, 1898. She presented the appearance of a woman of large stature, dark complexioned, rather poorly nourished and of poor color. She had enjoyed vigorous health up to two years ago, but since this time had not felt very strong. Her father died of heart disease at sixty and her mother of Bright's disease, also at sixty. Of eight brothers and sisters six died young. Her menopause was established three years ago, the catamenia having been regular every twenty-eight days up to this time. She usually flowed from three to four days and soiled about four napkins altogether. After being irregular three months the catamenia ceased, following a rather lively hemorrhage. Flowing began again in June, 1898, and had continued ever since, amounting at times to a hemorrhage, though most of the time only a slight dribbling. No vaginal discharge other than the blood. Constant pain in the abdomen began with the appearance of the flow. At first this pain lasted only a few moments at a time, but latterly it would be present for two hours at a time. Constipation as a habit. Appetite poor. An occasional sufferer with palpitation. Patient had persistently refused any local examination, although strongly advised by her relatives.

Physical examination showed a very tight hymen and narrow vagina, and rigid tissues about the os. Rising out of the pelvis could be felt the enlarged uterus, about the size of a uterus four months pregnant. From the left side of the fundus a pedunculated nodule, the size of a hen's egg, could be felt. The mobility of the uterus was good. The sound went into the cavity for a distance of nine centimetres and detected the presence of much adventitious tissue located chiefly in the cervix on the left side and at the fundus in front and behind.

Operation, November 10th. — Hymen stretched and rigid os enlarged by dividing the cervix freely anteroposteriorly. Morcellation of the tissue at the fundus with the uterine cutting forceps and removal of the tissue in the cervix with the fingers and forceps. Irrigation of the cavity and packing with iodoform gauze. The successful manner in which the uterine cutting forceps removed the tissue in this case was to me especially gratifying and again demonstrated their value in similar cases. The tissue removed had the appearance of being broken down fibromyoma. It came away in shreds about three centimetres in diameter and was of a dirty red color, and in quantity was perhaps four ounces. Dr. M. H. Bailey, the pathologist of the hospital, examined the tissue microscopically and pronounced it to be carcinoma.

The patient had an uneventful convalescence from the operation, and December 1st I did an abdominal hysterectomy upon her. There was at that time a foul-smelling discharge from the cervical canal. The uterine cavity was packed with gauze and the cervix closed with a continuous stitch. There was nothing especially noteworthy about the operation. There was no evidence of the presence of any diseased tissue outside the uterus. A very small piece of the vagina was removed with the uterus, and the vagina was closed tight and the peritoneal cuff stitched to the vagina. Irrigation with salt solution and postural drainage.

The patient has made a good recovery and is now sitting up. The chief interest in the case centres in the specimen, which shows the presence of such a very large amount of cancerous tissue within the cavity of the uterus, even after the removal of a great deal, and also of fibromyomatous nodules, thus simulating a case of primary fibromyoma.

REPORT OF DR. WM. F. WHITNEY.

The uterus is enlarged, measuring about nine centimetres in length, and in general smooth. To the upper part of the fundus is attached by a thin pedicle a rounded (five centimetres) white, firm, fasciculated tumor covered by peritoneum (subserous fibromyoma). The wall is thickened (1.5 centimetres), the cavity dilated and the inner surface roughened and covered with shreddy necrotic fragments of a soft new growth which here and there invades the muscular substance.

Microscopic examination. — Pieces were taken from the fundus and cervix, and in both places the bundles of muscular fibres were separated by masses of large epithelial cells. In places there were perfectly tubular glands, irregular, however, in size and shape, accompanied by a matrix of large round cells lying between the bundles, and near by were solid masses of epithelium, with little, if any, of the accompanying cellular tissue.

The diagnosis is a diffuse adenocarcinoma of the uterus, originating in the mucosa. The specimen is entered under No. 9,290 of the collection of the Warren Museum of the Harvard Medical School.

February 6, 1899, the patient, then being at home,

[1] Read before the Obstetrical Society of Boston, December 20, 1898.

complained of a bleeding tumor at the vulva. Examination showed an ulcerated swelling the size of an English walnut situated on the anterior wall of the vagina over the lower course of the urethra. It had no connection with the hysterectomy cicatrix, the upper margin of the tumor being four centimetres distant from it. A free dissection of the growth was made on February 10th, but it was found that the disease had invaded the base of the bladder and the walls of the urethra so that complete removal was impossible. In April there was involvement of the glands in the groins and stoppage of urine and the patient finally died of septicemia July 24th. The pathologist reported that the tumor removed was epithelioma.

A CASE OF TETANY.[1]

BY FRANKLIN WARREN WHITE, M.D., BOSTON.

My reason for giving this report is the rarity of the disease in the vicinity of Boston, and the occurrence of certain unusual features in this case.

The patient was a boy three and a half years old, born in this country of Italian parents. No family predisposition to tetany, or other neuropathic heredity could be traced. Both parents were healthy, and there were four healthy children, none of whom had ever had an attack. The boy had measles at the age of one year, and had had occasional attacks of acute indigestion in previous years but none in the last year. He was nursed for the first eight months, and since then had an opportunity to eat anything on the family table, but lived mostly on bread, milk and potato. He has always lived amid poor hygienic conditions in the lower quarters of the city, and has been rhachitic since a baby. His first teeth appeared at the age of one year and he was not able to walk till two and a half years old, and has never been able to run about freely owing to hip deformity. He has never had any previous attack of tetany. The present illness developed suddenly with muscular spasm of the lower limbs without any previous pain, tingling, or other premonitory symptoms. The spasm was continuous whether asleep or awake, without any paroxysms. The legs and feet were held stiffly in a strongly extended position, and voluntary motion was almost impossible. The spasm was not apparently painful, but handling or moving the legs showed that they were quite tender. The muscles of the trunk, head and arms were not involved. There was no spasm of the larynx, nor difficulty in swallowing or articulation, and no general convulsions. The child's intelligence was not impaired during the attack. There was no digestive disturbance before or during the illness. The child was fairly developed and well nourished and had good color. He showed marked signs of rhachitis, a large square head, large rosary, enlarged epiphyses at wrists and ankles, a flaring lower chest, prominent belly, and slight kyphosis. There was slight enlargement of the spleen and lymphatic glands.

The muscular spasm was symmetrical in the lower limbs, the knees were strongly extended, and the feet extended in the position of talipes equinus, with the toes flexed. The thighs were strongly adducted, with a tendency to hold the feet crossed. The muscles of the thighs and calves were firm and hard, in a state of tonic spasm, but without fibrillary twitching. There was practically no voluntary motion in the legs and feet. Chvostek's symptom, spasm of the facial muscles following a sharp blow upon the facial nerve, could not be obtained. Trousseau's symptom, the production of characteristic contractures by pressure on large nerves, was easily obtained during and after the attack. There was never any spontaneous spasm in the arms, but pressure on the large nerves of the upper arm during the height of the disease readily produced typical contractures lasting for a minute or two, the fingers were flexed at the metacarpo-phalangeal joints and extended at the other joints and were pressed together, the thumb was adducted and extended, the wrist slightly flexed, and the hand turned toward the ulnar side; the elbow and shoulder were not involved. For several days after the continuous spasm had subsided in the legs, the contractures would recur whenever an attempt was made to walk or stand, and could also be induced by pressure upon nerve trunks in the thigh.

Erb's symptom, increased electrical excitability of the muscles and nerves, was present during and after the attack. The muscles were tested with the faradic current only and their excitability was found very much increased in the arm and leg. This increased excitability persisted for about ten days after all spontaneous spasm had ceased, and five or six days after any contracture could be produced by nerve pressure. I regret to say that I did not have an opportunity to test the muscles with the voltaic current, for the qualitative electrical changes are of considerable interest. The cutaneous reflexes were increased, the knee-jerks were slight at first (owing to persistent muscular contraction), later were very lively and remained increased for three weeks after the attack. Wrist and elbow jerks were not obtained. No vasomotor or trophic disturbances of the skin, such as perspiration, redness, or edema, were noted. The patient's pulse and temperature were normal during the attack, and nothing pathological was found in the urine.

The diagnosis in this case is easy; the peculiar character of the spasm, its commencement in the extremities, its limitation to certain muscle groups and its bilateral symmetry are all typical of tetany. The continuous character of the spasm suggests tetanus, but this is clearly excluded by the absence of any external injury, the absence of trismus and the presence of Trousseau's symptom. The age of the patient, the bilateral character of the spasm and the course of the attack exclude the possibility of hysteria, and there is nothing in this case to remind one of epilepsy, though Sachs cites an instance where frequently repeated epileptiform convulsions simulated tetany closely enough to cause a mistaken diagnosis. Sachs and Gowers describe a simple "carpopedal spasm" with inversion of the thumbs and great toes, which may occur in rhachitic children either alone or preceding a general convulsion, but it is evidently not the condition we are dealing with in this case, from the duration of the contractures and the presence of Erb's and Trousseau's symptoms.

The treatment of this case was as follows: The child was put to bed and kept as quiet as possible, a simple diet given and daily warm baths advised. He also took ten grains of sodium bromide daily for several days. Gowers says that continuous tetany in early

[1] Read before the Clinical Section of the Suffolk District Medical Society, May 17, 1899.

life is less amenable to sedatives than the intermittent tetany of older children and adults. In this patient the continuous spasm, which had lasted for four days when I first saw him, disappeared two days after treatment had begun. For a week longer, any attempt to use the legs in standing or walking provoked a temporary spasm, and the child was therefore kept in bed as much as possible. Trousseau's symptom was present up to this time. Ten days after the end of the attack the child was able to walk as well as he ever could. The lively knee-jerks and increased electrical excitability of nerves and muscles lasted for several weeks after the attack.

I regard rhachitis as the cause, or, at least, the predisposing factor in this attack of tetany, therefore treatment was directed to improving the child's general condition, with the object of preventing further attacks, and a suitable diet, fresh air, cod-liver oil and iron were prescribed.

The parents stated that the child had never been able to walk properly, and in examining the legs after the contractures had entirely passed away a chronic deformity was found. The trochanters were half an inch above Nelaton's line; abduction of the thighs was limited to one-half the normal amount, flexion of the thighs was increased and hyperextension limited, fifteen degrees of inward rotation of the thigh was possible and about eighty degrees of outward rotation. There was marked general anterior bowing of the femur, with slight outward bowing. Extension of the knees was twenty degrees less than normal, due in good part to bowing of the femur above the condyles. The condition is one of "coxa vara," a bone lesion resulting from rickets and not in any way connected with the contractures present during the attack of tetany. The treatment of the "coxa vara" will not be referred to here.

This attack occurred at the time of greatest frequency of tetany, namely, winter or early spring, and in the absence of any acute infectious disease or gastro-intestinal disturbance, we regard the rickets, or the same conditions which produced the rickets, namely, indoor life, unhygienic surroundings, lack of sun and air, as the predisposing factor.

The features of special interest in this case are (1) the limitation of the spontaneous contracture to the feet, which is rare, as the spasm almost always involves the hands, often the hands and feet at the same time; (2) the continuous character of the spasm, which is distinctly less common than the paroxysmal sort; (3) the short duration of the attack and the lack of any recurrence up to the present time, an interval of about two months.

In closing I wish to thank Dr. James S. Stone for his kindness in making a careful examination of the hip deformity.

A CASE OF GASTRIC TETANY.[1]

BY RALPH C. LARRABEE, M.D., BOSTON.

THE patient was a married woman of twenty-six. Her family history was negative. Her habits were good and her past history negative, except that she has always been a hearty and careless eater, and several years ago she had a severe attack of "indigestion." It followed overeating but was not at all like the illness here reported. Otherwise she has always been unusually free from gastric symptoms.

The present attack began in the forenoon of April 30, 1899. The night before she had eaten only a light supper and in the morning was perfectly well. She had for breakfast only oatmeal and milk. Later in the forenoon she ate some maple sugar and a banana. Soon after she had a headache increasing in severity, but she was able to eat a large dinner consisting of the following remarkable assortment: Roast lamb, potato, lettuce, cucumbers (with oil, vinegar, pepper, and salt), rhubarb pie, banana and milk! After dinner she took a Seidlitz powder, and repeated it about an hour later. Headache and nausea soon compelled her to go to bed. There was no vomiting and no pain in the abdomen or elsewhere. Two hours after eating she tried to undress but fainted while doing so. Her husband carried her back to bed and she soon regained consciousness. Then she began to have spasmodic contractions of the arms. The elbows and wrists were strongly flexed. The fingers were extended at the phalangeal joints and flexed at the metacarpo-phalangeal joints. The feet were not affected. There were prickling sensations in the forearms and hands, and severe pain. The cramps were intermittent, and lasted in all about twenty minutes.

I saw her about an hour after the spasms had subsided. She had had in the meantime a large, spontaneous evacuation of the bowels, not containing blood, mucus, or undigested food, and not foul. She was complaining of nausea and very severe headache. She was much exhausted and pale. Her pulse was fairly good and her temperature normal. The chest was normal. The abdomen showed nothing abnormal except slight tenderness in the epigastrium. On making pressure over the brachial artery and its accompanying nerves of the left arm there was a return of the pain and prickling sensations, followed by contractions of the forearm and hand, the position being perfectly characteristic of tetany — Trousseau's sign. After omitting the pressure, pain and spasms rapidly subsided. Chvostek's sign was absent. The patient was not at all hysterical.

The woman was encouraged to vomit, which she soon did. No emetic was given. She got rid of about a quart of greenish material, not containing undigested food or mucus, and having very little odor. Headache was at once relieved. She also received four grains of calomel and twenty grains of potassium bromide.

The patient was up and about within twenty-four hours, and on the third day she resumed her usual occupations and her usual indiscretions of diet. When I next saw her, Trousseau's sign was absent. There was no abdominal tenderness, and no evidence of gastric dilatation, except slight splashing on palpation in the epigastrium.

In nearly all of the reported cases of gastric tetany there has been chronic disease of the stomach, most frequently dilatation or pyloric disease. In many of these the symptoms have followed severe vomiting: in a few they have followed the use of the stomach tube. In the cases of this sort reported by Bouveret and Devic[2] and by Fenwick[3] the mortality has been about 70 per cent. In my case there was no evidence

[1] Read before the Clinical Section of the Suffolk District Medical Society, May 17, 1899.

[2] Revue de Médecine, February, 1892.

[3] The Practitioner, April, 1892

of dilatation. I did not pass a tube or inflate the stomach in any way and I think that such a procedure, in view of the outcome of many of the cases of tetany where this has been done, would have been wholly unjustifiable.

In acute conditions of the stomach tetany is much less frequent. It has followed acute indigestion and overloading the stomach in delicate and feeble people. In children [4] with tetany the attacks are often associated with alimentary disturbance.[5] It has been reported in cases of chronic gastric indigestion, the spasms coming on repeatedly after overloading the stomach.[6] It is, however, at least rare in otherwise healthy adults with simple acute indigestion. In my case the cause seems to have been acute gastric indigestion, due to greatly distending the stomach with improper food, possibly aided by the gas from two Seidlitz powders.

A CASE OF ATAXIC PARAPLEGIA DEVELOPING UNDER CIRCUMSTANCES OF UNUSUAL INTEREST.[1]

BY J. W. COURTNEY, M.D., BOSTON,
Assistant in Nervous Department, Boston City Hospital; Visiting Physician to the Home for Incurables, Dorchester.

IN the great majority of cases where persons are afflicted with nosophobic tendencies their fears are mainly remarkable for the small possibility of realization. The following case, which occurred in the practice of Dr. T. M. Gallagher of Newton, is of interest as a striking exception to this general rule. The patient is an unmarried woman of thirty-six. She was born in Ireland, and is by occupation a domestic. Her family history is negative as to nervous and mental disease. Her previous history is free from sickness of any kind since childhood, and she has never considered herself of neuropathic temperament. The trouble from which she at present suffers had its inception five years ago when, in her employment as domestic, she was thrown much in contact with her employer's wife, an elderly woman, who was crippled with rheumatism and who finally succumbed to cerebral hemorrhage, of which she had had several attacks. After one of these attacks the old lady became very emotional and was subject to seizures of uncontrollable laughing and crying, which made such a powerful impression upon the girl that she grew to be haunted by the dread of being similarly afflicted. For an entire year this fear seldom left her, and at the end of this time (January, 1895) she noticed that her lower extremities were growing weak and were the seat of a constant heavy feeling. In addition to this she experienced a persistent dragging pain in the lumbar region and in her hips. She soon found, moreover, that she grew easily over-tired even on slight exertion, and that she was prone to stumble and fall on the slightest provocation in the way of an unevenness in the floor. These falls have been accompanied by attacks of uncontrollable laughing and crying, during which she will not allow any one to come to her assistance. After the emotional outburst subsides she rolls over on to her knees and gets up unassisted, somewhat after the fashion of a patient with pseudomuscular hypertrophy.

Five months after the onset of her trouble, increasing weakness and the embarrassment of her locomotion compelled her to abandon her work, and she has been able to do nothing since. To the tendency to stumble and fall was soon added a marked ataxia of the lower extremities, and for a long time now she has employed a cane to assist her in getting about. Within a year a slight but distinctly noticeable slowing of speech has manifested itself.

Altogether her symptoms may be recapitulated as follows: (*a*) Marked emotional instability with attacks of causeless laughing and crying; (*b*) weak, dragging feelings in lower extremities, with constant dull pain in lumbar region and hips; (*c*) marked ataxia of lower extremities, with increasing tendency to stumble and fall; (*d*) noticeable slowing of speech.

There have been no headaches, no failure of vision, no diplopia. The integrity of the sphincters has been preserved, and nothing approaching lightning or girdle pains has ever been present. The patient is strongly impressed with the idea that she has caught her trouble — as she expresses it — from her former employer's wife.

Physical examination. — Patient medium height; fairly well developed and nourished; color fair.

Gait. — This is spastic-ataxic to a very marked degree. The patient clutches at surrounding objects for support as she walks, and on attempting to turn she falls to the floor, if not supported. Nevertheless, it is difficult to say whether the spastic or the ataxic element predominates.

Station. — Static ataxia is so great as to preclude the possibility of her standing alone with both eyes shut.

Pupils. — The right is somewhat larger than the left, but both are perfectly regular and react promptly to light and in accommodation.

Ocular muscles. — Normal, except for very slight tendency to nystagmus on looking upward and outward.

Visual field. — Normal.

Facial muscles, tongue, soft palate. — Normal. Speech is somewhat slow, but cannot properly be called scanning.

Upper extremities. — Strength fair and equal; slight tendency to tremor on purposive movement, especially on left, and the deep reflexes are plus on this side.

Heart and lungs. — Normal.

Kidneys. — Normal.

Lower extremities. — Strength very much impaired; this more marked on the left than on the right side. In spite of the very evident ataxia which is here present, myotatic irritability is much increased, the knee-jerks being greatly exaggerated, with ankle-clonus on the left but not on the right side. The superficial reflexes show no alteration, and there is no tendency to contractures.

Sensation. — There is a slight hypoalgesia over irregular areas on the thighs, but there is no true analgesia or anesthesia.

In the opinion of the writer we have presented in the above combination of symptoms about as typical a manifestation of that pseudosystemic form of spinal sclerosis which we designate clinically as ataxic paraplegia as it is possible to have. That the mental atti-

[1] Read before the Clinical Section of the Suffolk District Medical Society, May 17, 1899.

[4] Morse, J. L.: Journal of American Medical Association, November, 1898.
[5] Griffith: American Journal of the Medical Sciences, vol. cix, 1895.
[6] Max Einhorn in Twentieth Century Practice, vol. viii.

tude of the patient is that of a hysteric cannot be denied, and this factor in connection with the irregular areas of disturbed sensibility on the thighs calls, to a limited extent, for differentiation. The circumstances under which the trouble originated are certainly suggestive, and the lapse of time between the acquirement of the fear of disease and the establishment of the preliminary symptoms might justly be called, after Charcot, the period of meditation. When we consider, however, the obscurity under which is veiled our knowledge of the etiology of the form of sclerosis which we assume to be present in the case in point, the only etiological factors which we have at command may be considered as potent for the production of a sclerosis as for a psychosis. Furthermore, it must be borne in mind how frequent is the association between the various etiologically obscure spinal scleroses and hysteric manifestations. This is especially true of the "*scléroses en plaques*," and has repeatedly given rise to errors in diagnosis.

With regard to the disturbance of sensibility which is present in this case, the writer admits that it is not ordinarily found in the so-called ataxic paraplegia, owing to the fact that it is the postero-internal columns of the cord rather than the root zones which are found degenerated. In view, however, of the essentially irregular distribution of the sclerosis — in other words, its pseudosystemic character — it is safer to conclude, in the case before us, that a few of the fibres in the postero-external column are affected, rather than to attribute a psychical origin to the hypoalgesia found. Leaving both these factors out of the question, there is still a third which, in my opinion, puts the case without a doubt upon an organic basis, namely, the presence of the ankle clonus.

This is the diagnostic factor upon whose value in the matter of differentiation between hysteria and organic disease I wish to lead the discussion. It is an old moot point and one of great medico-legal importance. My own feeling in the matter is that genuine ankle clonus invariably indicates organic disease. By genuine ankle clonus I wish, however, to be understood to mean a clonus that can be elicited at all times and one that does not cease during the individual trial after from two to three to fifteen or twenty movements. Speaking from personal experience with regard to hysteria, I am much more accustomed to find a normal muscle tonus than an exaggerated one, and I am always more surprised to find lively reflexes — to say nothing of ankle clonus — than I am to find normal ones. In looking over the notes of 50 consecutive cases, both hospital and private, I find the reflexes thus recorded: Lively, but equal and without ankle clonus, seven; considerably diminished, two; normal 41. In other words, a normal condition in 82 per cent. of the total number. I have under my care at the present time an absolutely typical case of hysterical hemiplegia with marked tendency to contracture at the knee-joint, and yet the patellar reflexes are diminished. I remember, also, very distinctly, two other cases, both of hysterical paraplegia, one of which had been bedridden for five years, in which the deep and superficial reflexes were as near normal as can possibly be imagined.

It is curious how silent the French writers are on the subject of tendon reflexes in hysteria. I have looked carefully through the works of the best-known authorities of this school, and find no special mention made of this very important subject. Among the Germans, v. Bechterew,[2] Oppenheim[3] and Sternberg[4] claim to have seen ankle clonus in connection with hysteria, and the last-named author goes so far as to say that it is present in 20 per cent. of such cases. Unfortunately for such claims, evidence is lacking that the clonus observed was genuine in the sense already set forth. Gowers,[5] who approaches the subject in his customary succinct and satisfactory fashion, says that a true foot clonus is all but conclusive evidence of organic disease, but that it may be obtainable during hysterical contracture. With this view, Mills, speaking from much clinical observation, is in accord, and in the discussion of a paper[6] recently presented by him before the New York Neurological Society in reference to the subject, the general sentiment coincided with that of Dr. Mills.

Before inviting the opinion of my listeners to the point in question, I wish to state clearly again the stand which I personally am inclined to take in the matter. This is as follows: (1) That no clonus ought to be considered genuine which cannot be obtained to the same degree — under the proper circumstances — at all times throughout the course of the disease; (2) that such genuine clonus is never obtained except in organic disease.

In conclusion I must revert to the title under which the case which forms the basis of this paper is reported, and say that a consideration of the circumstances underlying the evolution of the case seems to me to abundantly justify its selection.

FURTHER OBSERVATIONS ON THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.[1]

BY FENTON B. TURCK, CHICAGO, ILL.

In a previous communication it was shown that small quantities of hot water (55° C.) introduced into the rectum produced a marked effect on the heart and general circulation and especially on the abdominal organs. From these results it was evident that hot water introduced at the temperature mentioned into the colon had a greatly beneficial effect upon the abdominal viscera. Air, hot or cold, forced through a double tube into the colon and allowed to escape also acts not only as a powerful stimulant to the abdominal viscera but also acts as a species of pneumatic gymnastics of the colon. In the introduction of hot water into the colon the following technique is adopted: The patient is placed in a dorsal position upon a table specially devised for the purpose, which is so adjusted that the hips may be raised or lowered to any desired angle without discomfort. The solution employed is usually a nine-per-cent. normal salt solution when the therapeutic effect of heat and cold are desired. For other purposes mild antiseptic and medicated solutions may be employed. A soft-rubber tube, either single or

[1] Abstract of paper read at the Mississippi Valley Medical Association, Chicago, October 3, 1899.

[2] v. Bechterew, W.: Neurol. Centralbl., 1895, p. 1157.

[3] Oppenheim, H.: Archiv f. Psychiatrie, vol. xix, pp. 534, 525.

[4] Sternberg, M.: Die Sehnenreflexe und ihre Bedeutung für die Pathologie des Nervensystems, p. 254.

[5] Gowers, W. R.: Manual of Diseases of the Nervous System. Second edition, 1893, vol. i, p. 451.

[6] Mills, Chas. K.: Some Points of Special Interest in the Study of the Deep Reflexes of the Lower Extremities. Journal of Nervous and Mental Disease, March, 1899, pp. 131-160.

double, with end and side openings, is introduced into the rectum as far as the sigmoid flexure. At first 200 to 300 cubic centimetres of water at a temperature of 50° C. is introduced. This is allowed to return through the tube into a conveniently placed receptacle and the procedure repeated. Every time the water is introduced its temperature is gradually raised until it reaches 55° C. In all from three to six litres are needed. The patient is then allowed to evacuate the bowels, after which he receives similar short treatment with water cooled to 2° C. or 5° C. The amount of water introduced and withdrawn and the duration of the treatment depends upon the character of the case.

For continuous irrigation my double recurrent tube or needle douche has answered the purpose best in the hands of gastro-enterologists, like Herschell, Treves, Gillespie and others. By continuous irrigation a somewhat different action is obtainable from that already referred to. It is indicated in impaction. acute gastro-enteritis, and during the early stages of appendicitis. A strict observance of technique judicially varied in each case gives the best results.

The mucous membrane of the colon, like that of the throat, seems to be insensible to comparatively high temperature. The sensations within the colon as to heat or cold are not very definite. This may in part be due to the fact that the colon sensation has been so specialized as to fecal pressure as to lose its heat and cold reaction. That the treatment through the colon influences not only the general circulation, but also stimulates the nerve actions of the abdominal viscera, and even the cerebral and spinal blood pressure, has long been known. The principle on which stimulant enemata have been employed in opium coma and allied conditions is significant evidence of this. The anogenital centre is notoriously the last to be affected in coma. Numerous instances have been reported where death from opium coma and anesthesia has been prevented by its stimulation. Furthermore, stimulation of the ganglia in the walls of the intestines cannot fail to produce effect on the spinal and cerebral centres. The increased action of kidneys, liver and other organs after the employment of colonic means is evidence in this direction. This is further shown by the fact that favorable results depend not upon the amount of water introduced, but upon the reaction between heat and cold. Large quantities of water introduced at one time are detrimental. Small quantities frequently repeated have markedly beneficial effects.

In colonic treatment by water or air single or double recurrent tubes may be employed according to the nature of the case. A tube with a single opening at the end is useless, however, for colonic lavage. One designed by me consists of a rubber tube (one metre long and with a calibre of 23 A or 35 F), tapered at the end to an opening with bevelled edges. On either side are four small perforations opposite to each other in a row. Above this is a large side opening with edges so sunken as to prevent irritation in introducing the tube. The distance from the end of the tube to the uppermost opening is one and three-quarters inches. This tube ensures rapid return of the water injected, and there is no danger of the suction of mucous membrane by siphonage. There is thus less danger of traumatism and of closure of the end of the tube by the mucous membrane or feces. This tube ensures a more equable distribution of the fluid introduced and is therefore of special value in topical applications or in introduction of food. The double recurrent tube or "needle douche" previously described will be found of special value when prolonged irrigation or lavage is desired. It has been found particularly useful in obstruction, from whatever cause. by Herschell and others. For the same reason it is of value in appendicitis. The sprinkler at the end has proven useful in colon atony, or where hot or cold water is needed as a spray or needle douche. In some cases a tube capable of passing the sigmoid flexure may be needed. Most tubes now made pass only to this flexure but not beyond. The stiff tubes press upon and so bulge the walls as to give the false impression that the tube has passed through the flexure. The flexible tubes coil up and produce the same impression. My colonic sound and irrigator enables the physician to pass around the colon even as far as the cecum. It consists of a double curved metallic tube about sixteen inches in length, so made as to be passed through the sigmoid flexure. The tube not only serves as a channel for the return of fluids injected, but also as a sheath for the introduction of a flexible hollow metallic cable. The distal end of the cable is surmounted by an olive-shaped perforated head. This serves as a guide for passing the sound. As the cable is hollow it may be employed for colonic distention. This secured during the passage of the sound will ensure further introduction. The position of the cable tip may be determined by palpation, especially if the cable be rotated. Since the cable is metallic it can be employed as an electrode. Food by this instrument may be distributed over a wide area. Great objection frequently exists to the introduction of water, especially hot water, into the colon. The hot water produces depression, and even collapse at times. Warm water is particularly objectionable in this particular. Atony of the bowels from this cause, moreover, is very frequent. Distention of the bowels with water, subsequently withdrawn, would be of value in bowel gymnastics were it not for the fact that since the water is slow to return and is not compressible it causes undue distention.

In treatment of the colon the object is (1) when atony exists to secure heat; (2) distention; (3) contraction, and peristalsis producing gymnastic exercise. For these purposes air often answers better than water. If heat be desired the air can be heated by passing it from a compressed-air tank through a bottle of water heated to the required temperature before passing it into the colon. The method of treatment is useful in atony of the bowels, whether it exist alone or with obstruction or impaction. Compressed air is used with a double tube introduced into the colon. When the colon is distended, air is allowed to escape through the outlet tube. Air at 55° C. reaches as far as the colon. Nebulization of the colon may be thus employed, any of the nebulizing mixtures adapted to the colon being used.

Dr. William H. Howell made a Dean. — Dr. William H. Howell, professor of physiology, has been made dean of the Johns Hopkins Medical School, in place of Professor Osler, who has resigned. Dr. Henry M. Hurd continues as superintendent of the Johns Hopkins Hospital.

Medical Progress.

REPORT ON PROGRESS IN GYNECOLOGY.

BY EDWARD REYNOLDS, M.D., BOSTON.

INFLUENCE OF MENSTRUATION UPON THE AMOUNT OF HEMOGLOBIN AND THE CORPUSCLES IN THE BLOOD.

P. SFAMENI[1] pursued investigations on six normal individuals, four during one menstrual period only, and in two for four months. In each case he first ascertained the differences existing between the results of examinations made during the flow; he then divided the intermenstrual period into three, the first including the three days previous to the appearance of the menses, the second the three days following, and the third the remaining days. He obtained the following results:

	Hemoglobin.	Red blood corpuscles.	Leucocytes.
Average of results of examinations made during the menstrual period. . .	86.50	5,101,109	6,975
Average of results of examinations made before and after the menstrual period.	90.58	5,223,532	6,672
Difference in menstrual period . .	4.08	122,443	+303
Average of results of examinations made in the three days preceding the menses.	90.57	5,321,652	7,040
Difference in menstrual period . .	4.07	129,543	−65
Average in results obtained in the three days following the period . . .	90.00	5,220,749	6,507
Difference in menstrual period . .	−3.59	−119,640	+468
Average of results of examinations made during days remote from period . .	91.00	5,188,542	6,682
Difference in menstrual period . .	4.50	87,633	+293

These results show that the amount of hemoglobin contained in the blood is constantly diminished during the menstrual period, although to slight extent, being on an average about 4.5 per cent. The amount of diminution is in direct relation to the amount of blood lost during menstruation. The red corpuscles are fewer in number during menstruation than in the intermenstrual period. The leucocytes are increased in number during the flow.

TRANSPLANTATION OF OVARIES.

Dr. James F. McCone[2] reports four cases of experimental implantations of ovaries in rabbits, and founds upon them the following conclusions:

(1) Contact between ovary and tube is not essential for conception.

(2) Ovaries grafted from one part of an animal to another part of the same animal continue to grow, to functionate, and pregnancy can and does occur.

(3) An ovary grafted from one animal to another of the same species continues to functionate, and maintains the normal condition of tubes and uterus. Pregnancy can occur.

(4) Ovaries grafted from one species to another continue to functionate, and seem to prevent post-castration atrophy of tubes and uterus.

(5) Best results are obtained where the raw surface of the transplanted ovary is sewed to a denuded surface.

Practical value. — This paper suggests conservation of healthy ovarian tissue even on the opposite side from a patent tube. It indicates the possibility of grafting in the human species. It proves that successfully planted ovarian tissue prevents the post-castration atrophy of tubes and uterus. The normal condition of uterus and tubes was maintained even when ovaries were grafted from one species to another. The grafting of animal ovaries may, therefore, be used in the human species to prevent the atrophy and post-castration nervous symptoms. [*These statements are the author's.*]

In 1896, in the *Centralblatt für Gynäkologie*, Knauer reported having transplanted ovaries from one part of an animal to another part of the same animal. He had four cases, and demonstrated functionating ovarian tissue microscopically some months after operating. In 1897, in the same paper, Grigorieff reported pregnancy after ovarian transplantation. In 1897 M. F. Jayle promised the Anatomical Society of Paris a report on ovarian transplantation, but has thus far published no report. In 1898 Knauer reported successful pregnancy after ovarian transplantation. Morris, of New York, and Frank, in Germany, have reported transplantation in the human species.

CAUSES OF OVARIAN PAIN.

George Halley[3] says that patients often complain of excessive pain in the lower part of abdomen, which is not confined to the pelvis, but radiates upward and backward, following a line about two inches inside the crest of the ilium. Sometimes the pain is on the outside or back of the thigh; sometimes it is confined to the lower portion of the iliac fossa and upper two inches of the thigh. It is usually of a dull, aching, persistent character, increased by motions or pressure. It varies in its relation to the menstrual periods. The usual symptoms occurring with this condition are constipation, painful or difficult micturition, nervousness, sleeplessness and prostration. While cystic degeneration of the ovary is often the cause of this train of symptoms, in many cases it is due to a varicosed condition of the pampiniform plexus. The veins composing the plexus are sometimes as large as a lead pencil and tortuous, with the walls enormously thickened. This condition can usually be differentiated from cystic ovary. In the latter case the ovary is excessively tender and the pain is most severe during the menstrual period, while in the former condition the greatest freedom from pain is after the menstrual flow has been fully established and the ovary is free from tenderness. In cystic ovary menstruation is irregular, the periods being much further apart than normal, while in the varicosed condition of the plexus the flow often occurs twice in a month, though in both conditions there may be normal menstruation. Hot douches aggravate all the symptoms. The writer's treatment is to ligate both ends of the vein of this plexus with some good, strong material, and cut out, or ligate and cut out, veins, just as is done in most cases for the radical cure of varicocele. The ligation must be very thorough, as the artery will produce a hyperemic condition of the ovary and there is danger of hemorrhage from the ends of the cut vessels.

The reason that operations on the ovary often fail to relieve pain is owing to the fact that the plexus, and not the ovary, was diseased. Even where the ovary is cystic it is possible that ligation of the veins might be beneficial, if not curative, and the woman would still be sexually perfect.

THE MENSTRUAL FUNCTION AND HEMATOPOIESIS.

Giuseppe Poggi[4] says that the fact that menstruation may influence the hematopoietic function is not

[1] British Medical Journal, May 13, 1899.
[2] American Journal of Obstetrics, August, 1899.
[3] Journal of the American Medical Association, April 29, 1899.
[4] Arch. Ital. di Gin., February 28, 1899.

unknown, although there have not been many exhaustive researches into the subject. Isolated observations, however, made upon the blood during the menses show that there is an intimate relationship between the two processes. In order to ascertain the modifications which may occur in the blood during menstruation, Poggi instituted a series of experiments upon normal patients, determining the amount of hemoglobin daily with Fleischl's hemometer, during and after the menstrual flow for about a month. The charts show that the curve of hemoglobin is nearly always lowered for a few days before the appearance of the flow, just at the time when disturbances of various kinds are apt to occur. When the flow is established the hemoglobin reaches the first level. The author is unable to state whether the hemoglobin during the menstrual period is in proportion to the quality or to the intensity of the pain suffered by the patient, but he does state that it bears no relation to the amount of the blood lost. The anemia appearing, as it does, before the flow cannot be attributed to loss of blood, but must be due to more complicated and recondite causes. The transitory oligochromenia does not continue after the flow; moreover, the 200 cubic centimetres (about) of blood lost gradually throughout several days could scarcely account for a lowering of hemoglobin to 10° or 15°, which frequently occurs, and besides it is very quickly replaced by means of the functional activity of the hematopoietic organs. In such small hemorrhages the number of new cells produced may be two or three times greater than that lost. This may be the reason why the curve of hemoglobin, which was lowered during the premenstrual period, rises as soon as the flow is established. The author asks himself whether the diminution of hemoglobin often present during menstruation is not a certain symptom of anemia, since it may be produced by simple constriction of the cutaneous capillaries from vasomotor disturbances. The uterus and ovaries during menstruation especially become the seat of centripetal stimulation, and it is a well-known fact that stimulation of the genital tract may cause the greatest variations in the calibre of the blood-vessels. By experimentation Poggi found that the diminution in the hemoglobin, however, is real, and not dependent upon constriction of the peripheral veins or a displacement of the blood mass.

The lowering of the hemoglobin curve is in relation to the lessened consumption of albumin which occurs in menstruating patients, and is manifested by diminished elimination of nitrogen through the urine and feces, this diminution taking place a little before the appearance of the uterine hemorrhage, and at the same time as the descent in the hemoglobin curve. The processes of nutritive exchange are therefore retarded during menstruation. This function causes a depression in all the organic functions, the temperature is lowered, blood pressure is diminished, the nerves, especially the vasomotor nerves, are more torpid, respiration is less easily influenced by external stimuli, the mobility of the stomach is impaired, and muscular weakness usually occurs. Reasoning by analogy, Poggi believes that the diminution of the hemoglobin is due to a retardation in the production of blood. He holds that the nervous system plays an important part in this process, an impulse being transmitted from the cerebro-spinal centres to the ganglionic system of the generative organs, thence to the ovary, this organ being the medium for the special activity of the nerves. Still, it cannot be the only factor, since Goodman found a vaginal menstruation in the case of 27 women whose ovaries had been removed. Many other facts go to prove that the nervous system has a marked influence upon menstruation, as, for instance, that intense emotions may suppress or increase the flow. It is hard to say by what mechanism a diminution of hemoglobin occurs at each menstrual period. It might possibly be due to a vasomotor disturbance in the functioning bone marrow, such as occurs in osteomalacia, produced, according to Fehling, by a passive congestion of the bone tissue caused by stimulation arising in the ovaries. Under the influence of menstruation something similar to this might occur, the congested condition mentioned causing a stasis in the hematopoietic organs, and hence a clearing of the circulation, with consecutive diminution of hemoglobin. The latter would then be seen to depend upon a diminution in the number of red corpuscles, but Poggi has not been able to ascertain definitely whether this is the case on account of the uncertain action of the instruments at our disposal.

VAGINAL HYSTERECTOMY.

Dr. Pryor[1] describes his method of performing this operation as follows: He makes the usual vaginal incision, except that the incisions do not join at their lateral extremities, but leaves a strip of mucous membrane an eighth of an inch wide intact between them. He then separates the uterus from its attachments anteriorly and posteriorly by the fingers, and till the peritoneum is open, and further passes one finger up along the posterior surface of the uterus in the median line as high as he can reach, separating the adhesions, however, over a tract no wider than the finger, then draws the uterus down with traction forceps applied one at each side of the external os, and splits the anterior wall of the uterus as far as he can see, then attaching fresh traction forceps to the upper angle of this he draws the uterus down farther, rolling out the cut and continuing the incision in the median line through the anterior wall until the fundus comes into view. He then passes a large grooved director up along the uterus posteriorly in the tract laid bare by the finger, and brings it into view in front of fundus, then slits the uterus with a knife on the director so that it is separated into two lateral halves. A pair of traction forceps is then fastened into the fundus of each segment and another pair into each side of the cervix. The right half of the uterus is then shoved high up into the pelvis, the left is drawn down, the adhesions, the adnexa freed until this half of the uterus and broad ligaments is wholly clear. This is then shoved far back into the pelvis, the right half drawn down and the process repeated, except that great care is taken to avoid injuring the appendix in case it should be adherent to the appendages on the right side. When the right half of the uterus and the appendages are thoroughly freed the fundus of this side is drawn strongly downward and the ovarian artery is clasped with a pair of forceps slowly from above downward. The same process is repeated on the other side and the uterus is removed. The strips of mucous membrane left intact in the original incision prevent the broad ligaments from

[1] American Journal of Obstetrics, May, 1899.

being torn during the annexing. The pelvis is then dried, inspected for hemorrhage, and packed with gauze.

THE USE OF THE DOYEN CLAMP.

Dr. Henry P. Newman, of Chicago, Ill.,[6] figures his own modification of Thumin's modification of the Doyen clamp. He has extended the use of the instrument to the removal of the tubes and ovaries, or portions of the ovary, by the clamp instead of by the knife, or scissors and ligature. He reports six satisfactory cases without any objectionable features.

TUFFIER'S ANGIOTRIBE.

The angiotribe is a compressor of the same class with Doyen's clamp.

Dr. I. S. Stone,[7] of Washington, D. C., reports seven cases operated upon with this instrument. He considers the individual instrument an exceptionally clumsy and inconvenient one, but speaks very highly of its virtues. He summarizes his conclusions as follows:

Its field of usefulness. — In all cases where fairly healthy, firm tissue permits its use, the angiotribe as a compressor is nearly perfect in its action. In all necrotic tissues, or in myomatous or omental structures, its work has not been altogether satisfactory, and further study of its action is necessary. There is no reason why the ureters should be endangered by its use in supravaginal hysterectomy. Contrary to what has been predicted by many, the stump is not a mass of mangled and devitalized tissue, but a very small, neat, almost invisible line.

Pain. — The cases mentioned in this report have had almost no pain. The contrast between the suffering of patients treated by the wire clamp and after this method of performing hysterectomy is striking and convincing, and under no circumstances would the writer return to the clamp or wire, or even use *en masse* ligatures. It is not customary to witness severe pain after pelvic operations, where *en masse* ligatures are discarded, and we think patients subjected to supravaginal amputation should have as little pain as after a double salpingo-oöphorectomy.

It has been claimed by some that the angiotribe acts much in the same manner as the écraseur. Surely no one who has seen the work of the two instruments would make such a statement. The same may be said of torsion, which may do very well in amputations, but we would scarcely feel so secure should we use this method of hemostasis in abdominal work.

VAGINAL HYSTERECTOMY WITH DOYEN'S CLAMP.

Thumin[8] reports 31 successful operations in which the broad ligaments were temporarily compressed with an instrument devised by him on the principle of the angiotribe of Doyen and Tuffier. All the operations were bloodless, and the convalescence was uncomplicated. The effect of the great pressure maintained for two minutes before the removal of the clamp, as shown by microscopical examination, is to cause obliteration of the arteries by adhesion of the opposed endothelial surfaces, while the proximal and distal ends are plugged by thrombi — in short, the tissues are mummified but not necrosed.

[6] American Gynecological and Obstetrical Journal, April, 1899.
[7] Loc. cit., July, 1899.
[8] Centralblatt für Gynäkologie, 1899, No. 5.

PERITONEAL ABSORPTION.

Noetzel[9] concludes that the true significance of peritoneal absorption is the removal of part of the bacteria which are present. The peritoneal fluid is the principal agent in accomplishing the result, aided by the peristaltic movements of the intestines. Its bactericidal power is greater than that of any other serous fluids (Gewbssäfte). On the other hand, the peritoneum is exceedingly sensitive to irritation, whether mechanical, chemical or thermic, and in consequence loses its peculiar power of disposing of bacteria. Toxins in particular inhibit its germicidal action. The practical deductions are the importance of avoiding septic infection and mechanical injury to the peritoneum during operation and the withholding of opium in order to favor peristalsis.

ULTIMATE RESULTS OF MYOMECTOMY.

Abel[10] presents a complete record of the abdominal sections for uterine fibromyomata performed by Zweifel from 1887 to 1894. Seventy-one patients were repeatedly examined by the writer during a period of five years, so that he was able to state their exact condition. Many interesting facts were brought out, among them the behavior of the stump after supravaginal amputation (according to Zweifel's method). Contrary to the opinion of those who advocate total extirpation, in only nine cases did suppuration occur, the patients making a good recovery and presenting no local complications in subsequent examinations. Vesical symptoms were less marked than after hysterectomy. The patients were all able to perform their usual work within three months after operation. The question of vaginitis and contraction of the vagina after supravaginal amputation was carefully studied; the former appeared to be due to mechanical causes (difficult coitus) rather than an irritating discharge from the cervical canal. The danger of malignant degeneration of the cervix seems to be so small as to furnish no argument against the operation. According to the writer's observation it undergoes progressive atrophy. A careful study of the cases in which the ovaries were left after removal of the uterus led to the inference that the glands undergo a more or less rapid atrophy, which results in complete loss of their functions before the natural time of the climateric. Glaenecke's statement that atrophy of the external genitals is delayed when the ovaries are preserved was not borne out by the more extended observations of the writer. On the other hand, the phenomena observed resembled the normal rather than the artificial climacteric noted after castration of young women. The average persistence of the menstrual molimen when the uterus alone was removed was eighteen months. Three patients whose ovaries were not removed presented the interesting phenomena of more or less regular menstrvation after supravaginal amputation, persisting in one instance for five years. The writer concludes that it is better to preserve the ovaries whenever this is possible.

BLOOD EXAMINATION IN GYNECOLOGY.

Dr. Walter R. Griess[11] after some judicious observations on the value of the blood examination in cases of doubtful diagnosis, goes on to say:

[9] Archiv für klin. Chirurgie, Band lvii, Heft 2.
[10] Archiv für Gynäkologie, Band lvii, Heft 2.
[11] American Journal of Obstetrics, August 18, 1899.

The relations of a normal or abnormal temperature to pus tubes and the relations of a leucocytosis to pus formation when a normal or abnormal temperature is present are equally interesting. Should a leucocyte count be made in a woman having an elevated temperature and acute symptoms, with pus tubes, we, as a rule, find a leucocytosis of 15,000 to 25,000 leucocytes to one cubic millimetre. As a temperature becomes normal and the general health improves, acute symptoms subsiding, the leucocyte count will diminish to from 10,000 to 15,000 cubic millimetres. A leucocytosis of 10,000 per cubic millimetre or more in a woman in pelvic pain, after all acute symptoms have subsided, is — eliminating diseased conditions of the blood (*per se*) or of other organs by a careful physical examination and by a careful consideration of the clinical history — indicative of suppuration of some of the pelvic organs. A leucocytosis in a woman with pelvic pain associated with fever of a septic or continuous type is of no great value in making a diagnosis of suppurative disease of the uterine appendages. A simple salpingitis (catarrhal), just as with a catarrhal appendicitis, will produce a marked leucocytosis, but after acute symptoms subside the leucocyte count will again become normal. In this condition a leucocyte count is of value, not as a means of determining the presence of suppuration, but as an aid in making a differential diagnosis. But should a leucocytosis continue after acute symptoms have subsided, then the presence of suppuration is almost certain. It not infrequently happens that the laparatomy is done for the relief of pain from an adherent retrodeviation, and upon opening the abdomen the malposition is found, but then only the true cause is revealed; some small pus tubes, probably thickened and bound down by adhesions, dragging the uterus from its normal position. It is necessary to remove these diseased appendages, but had a leucocyte count been made it might have saved an error in diagnosis. The differential diagnosis between typhoid fever and pus tubes in prostitutes, or in women where a history of some uterine infection exists, is at times extremely difficult, but the presence of the leucocytosis determines the latter and rules out the former.

Too much stress cannot be laid on the fact that all other conditions which might produce a leucocytosis must be considered — tuberculosis in many of its forms, abscess cavities in any other places, suppurative pyelitis, furunculosis. A leucocytosis in chronic Bright's disease is very common, and there are many infectious diseases where its presence is associated with definite clinical manifestations. There are cases with suppuration where no leucocytosis is present. Cases in which the general health and state of nutrition is very low have no leucocytosis as a rule. Cases of secondary anemia rarely show a leucocytosis. Colored women who have pus tubes or pelvic abscesses seem to be especially subject to menorrhagia and metrorrhagia, and in such cases the red count is often reduced to half and the leucocyte count to about one-half of what we would expect. In these cases, knowing the relation of the red and white count, we are not lost in making the diagnosis.

PEPTONURIA IN PELVIC ABSCESS.

Dr. W. Frank Haehnlen [12] states that Brüke's peptone is most frequently present in the urine in cases where there is an accumulation of or breaking up of leucocytes or pus corpuscles, as in stage of resolution of pneumonia, suppurative processes, etc. After enumerating the various conditions in other organs which should be eliminated as offering a reason for the presence of peptonuria, he goes on to report seven cases of pelvic abscess in which the test showed satisfactory results. He sums up by saying that it is interesting to note that in all the cases in which the peptone was found in the urine pus was found in the pelvis, and in only one pus case was there a discrepancy found in the urinalyses.

[12] American Gynecological and Obstetrical Journal, June, 1899.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

REGULAR meeting Wednesday, May 17, 1899, DR. H. F. VICKERY in the Chair.

DR. FRANKLIN W. WHITE reported

A CASE OF TETANY.[1]

DR. VICKERY: If the Society approves we will defer discussion of DR. WHITE'S case until DR. MORSE has shown a patient whom he has brought.

DR. J. L. MORSE reported

TWO CASES OF INFANTILE TETANY.

Myer I., Jew, an only child, when nine weeks old was put on a mixture of barley water and milk in addition to the breast. He did fairly well until the latter part of February, when he had an acute attack of vomiting and diarrhea. He was then put on a rough home modification of milk. I first saw him early in March, when he was seven months old. He had then been having attacks of what, from the history, were laryngospasm. At that time he was fairly developed and nourished, but pale. He had a large rosary and no teeth, but was otherwise normal. The diagnosis of rickets and laryngospasm was made, and he was given syrup ferri iodidi.

He did very well until April 20th. He took his food fairly well, had no vomiting to speak of, and the movements were normal. On that date his parents noted that he kept his hands clenched a good deal of the time, and that the backs of the hands and feet were swollen. On the 21st he had a convulsion. Examination on the 22d showed slight puffiness of the backs of the hands and feet. There was no tenderness over the nerve trunks. Neither Trousseau's nor Chvostek's symptoms could be elicited.

The spasms and convulsions continued and he was admitted to the Infants' Hospital on April 26. The examination on that date was as follows: Head rather large; parietal eminences large; slight craniotabes; anterior fontanelle large and full; no teeth. Marked rosary. Spleen palpable. Epiphyses at wrists large. Puffiness of the backs of both feet. Knee-jerks normal. Facial phenomenon absent. Trousseau's symptom present.

He remained in the hospital until May 8th. During his stay he was on modified milk. There was no

[1] See page 439 of the Journal.

vomiting, and the dejections were generally normal. He lost a little weight. The temperature was usually elevated, ranging between 100° and 101°. The urine was normal in color, highly acid, and contained no albumin. The greater part of the time he was completely relaxed, although at times he held his hands stiffly. Twice he had typical spasms, accompanied by evident pain. Trousseau's symptom was absent most of the time when there was no stiffness of the hands. The facial phenomenon was never obtained. Calomel and a diet of albumin water for twenty-four hours twice caused the complete disappearance of all symptoms. Sulphocarbolate of zinc had no apparent action.

His hands were a little stiff when he was discharged. He was put on a careful and complete home modification of milk. Since then he has taken his food well and has not vomited, but has shown a tendency to constipation. Has been almost constantly rigid, however, and has had many painful spasms. Day before yesterday was his worst day, and when he was seen yesterday morning his hands and feet were strongly contracted in the typical position. He was given calomel, and to-day he is completely relaxed. I had him come here to-night, hoping that he would show the typical contractures. As you see, however, he is completely relaxed. Trousseau's symptom is obtainable feebly on the right but not on the left. The facial phenomenon is absent. [This child was seen again early in October and there had been no return of the symptoms.]

Within the last few days I have seen still another case of this rather unusual condition. Laura P., seven and a half months old, of Nova Scotia parentage, only child, born at full term after a normal labor, was brought to the Infants' Hospital May 12th. She was nursed for a month, then given condensed milk for three months, next cracker and milk for two months, and finally Mellin's food for the last month and a half. Her appetite has always been good, and she has never vomited. She has, however, been very costive. Has gained weight. Has been restless at night and head sweats profusely. She has had spells of noisy breathing for three months. These, judging from the description, were attacks of laryngospasm. She had a convulsion in March and two in April. Also had several on May 4th, 10th and 11th. As described by the mother there can be no doubt as to their being characteristic of tetany. Puffiness of the backs of the hands has been noted off and on for some time.

Physical examination showed a fairly well-developed and nourished child. The head was asymmetrical, the right half being anterior. There was no craniotabes. The anterior fontanelle was small. No teeth. Held head up feebly. Unable to sit alone. Moderate rosary. Slight retraction of the ribs at the insertion of the diaphragm. Knee-jerks feeble. No tenderness over the nerve trunks. Facial phenomenon absent. Trousseau's symptom easily brought out, but only feebly. No puffiness of hands or feet. There was a typical attack of laryngospasm during the examination.

Although I have never seen the typical paroxysmal contractures in this case I have no doubt from the history and the symptoms of increased neuromuscular excitability that the case is one of tetany.

DR. R. C. LARRABEE reported

A CASE OF GASTRIC TETANY.[2]

DR. LIEBMANN: I should like, in saying a few words about gastric tetany, to mention one case described by Professor Fleiner, in Heidelberg, and also another by Albu. Both authors claimed that the tetany in their cases originated, as the reader remarked, in organic dilatation of the stomach resulting from stenosis of the pylorus, either malignant or benign, but they claimed that the disease is not due to reflex action, but to auto-infection, or auto-intoxication, although neither was able to demonstrate a microbe. They do not make light of gastric tetany, and say it is a very dangerous, life-threatening sickness, and so much so that both their cases were operated. Fleiner's case did not survive, but Albu's case got well immediately after the patient recovered from the operation, and he claims that in such cases, where the diagnosis of stenosis of the pylorus can be made, an operation ought to be done. Albu says Fleiner was discouraged by the result of the operation, and would discourage my further attempt at operation in such cases, but wrongly so, he says, because Fleiner's case was not a fair specimen to prove that an operation would not be appropriate in such cases, because in Fleiner's case there was not only the stenosis of the pylorus present, but also disease of the kidney and liver. Of course such complications would contraindicate the operation, but in his case the spasms, which had been frequent and increasing in violence and frequency, and threatening the life of the patient, after the operation the symptoms stopped entirely and the patient got well. I suppose a resection of the pylorus was made; I am not quite sure whether it was a resection or gastro-enterostomy. He furthermore remarks that after the patient was so far advanced in recovery that a tube could be introduced without any danger, the functions of the stomach were examined, and it was found that the motility of the stomach was entirely normal again, but the chemical function of the stomach did not come around. There was in this case entire absence of hydrochloric acid and atrophy of the glands of the mucous membrane, but the motor function of the stomach was entirely restored by the operation.

DR. G. B. MAGRATH showed

PATHOLOGICAL SPECIMENS.

(1) Aorta present ng multiple atheromatous ulcers.
(2) Spindle-cell sarcoma of the vagina.

The first specimen is an aorta removed at autopsy several weeks ago and kept, as many of our specimens are at present for teaching purposes, at a temperature of two or three degrees centigrade. It showed in the fresh state multiple atheromatous ulcers, rather well marked, with a tendency to the formation of mural thrombi. The case was that of a man of sixty-five or seventy, who died of chronic endocarditis. The specimen I brought partly to show the method in which we at present handle these specimens. A good deal of the material we use in teaching pathological anatomy is kept from week to week in the cold-room. That is a very satisfactory method for most of the viscera, notably lungs, liver and kidneys, which preserve their natural color, form and consistency very well.

The second specimen is from a little girl of eight,

[2] See page 440 of the Journal.

who died at the Children's Hospital a number of weeks ago with sarcoma of the vagina. The case was in the hospital under observation some weeks, inoperable, and finally died. Histologically, the tumor is a spindle-cell sarcoma originating from the anterior and left wall of the vagina, which, extending downwards, protruded at the ostium vaginæ three or four centimetres, and extended upwards in such a way as to impinge on the bladder and urethra, and finally cause sloughing of the inferior wall of the urethra. There were no metastases in this case, which is quite in keeping with the histological character of the tumor, which tends to grow as a tolerably distinct tumor with far less tendency to metastases than the round-cell type. There was double ureter of the left kidney. The pelvis of the kidney was single.

I should like to speak briefly of two cases of sudden death which I examined, post mortem, quite recently. One was that of a man of thirty-one, who for some years had had a moderate stricture of the deep urethra. It had not given him much trouble, but latterly he was bothered with it somewhat, and went to a doctor in Boston. On a Monday afternoon a sound was passed and the patient went home. He was not feeling well that night and the next morning called in his family physician. The doctor found him somewhat feverish, but apparently not very seriously ill. He was well enough that (Tuesday) afternoon to walk about the parlor, but about the middle of the afternoon collapsed. The doctor was called in, but by the time he reached him the patient was dead. At the autopsy I found in the membranous portion of the urethra multiple slight lacerations and a false passage leading off into the right bulbocavernosus muscle for three centimetres. This wound was perfectly clean, nothing indicating inflammation, a few subendocardial punctate hemorrhages under the capsule of the liver, otherwise organs normal, no fatty degeneration of the heart or kidneys. Bacteriologically, the organs showed streptococcus in the liver, spleen and kidney. The organism could not be demonstrated in the heart's blood, nor was the culture made from the heart's blood positive. Of course, it was a very rapid death if it were the result of septicemia.

The other was that of a man of forty-one, school teacher, who in the early part of his life had been quite athletic. He had had some attacks resembling angina pectoris, precordial pain of considerable intensity, and enough to cause him to see a doctor about it. The advice was given him to lessen his work somewhat if he could, and he acted upon that advice. On Monday afternoon he had a very severe attack of pain, and later in the day a loss of muscular power in both legs, with loss of sensation. That, however, passed away during the night, so that the next day he had full power of both legs and return of sensation. On Tuesday he was feeling pretty well, and Tuesday night ate a hearty dinner; at midnight he was found dead in bed by his wife. The autopsy the following day showed hemopericardium and rupture of the left ventricle three or four centimetres from the apex, sclerosis of the descending branch of the left coronary artery, infarction of the wall of the left ventricle, softening and perforation, with formation of mural thrombi. There was, in addition, a hemorrhage into the cavity in the spinal canal, extending from the third dorsal to the third lumbar vertebra, which was of recent origin and circumscribed.

Dr. J. W. Courtney presented a paper which was entitled

A CASE OF ATAXIC PARAPLEGIA DEVELOPING UNDER CIRCUMSTANCES OF UNUSUAL INTEREST.[3]

Dr. Knapp: I should agree with Dr. Courtney in pronouncing this case to be not one of hysteria pure and simple. I do not think, however, he has established a diagnosis between multiple sclerosis and ataxic paraplegia. The woman is comparatively young for ataxic paraplegia, and in ataxic paraplegia the association with hysterical symptoms is on the whole rather less common than it is with multiple sclerosis. The slight tremor which he mentions in the hands, the beginning implication of speech, the unequal pupils, are all suggestive of a process invading the central nervous system more extensively, and, as he has said, of a pseudosystemic trouble rather than a true ataxic paraplegia. The case is of interest as showing, however, the not infrequent association of hysterical manifestations with structural disease, to which Séguin years ago called attention and which is very common. The distinction between hysteria and multiple sclerosis is often, as we all know, a matter of exceeding difficulty, and it is a thing to which the French authors, in their vivid and graphic descriptions of hysteria, pay little attention, slighting the work which has been done by Bastian, Buzzard, and other English observers, by the claim that they know nothing of hysteria, and the cases which they claim to be multiple sclerosis are merely hysterical.

I would also agree with Dr. Courtney, in the main, in his belief that genuine ankle clonus, as a rule, indicates structural disease of the lateral columns. I say "as a rule," because I recall certain conditions which Dr. Courtney has not spoken of. In the first place, there is the familiar fact, which was first noted by Hughlings, Jackson, and later by Beevor and others, and which I have myself had the opportunity of observing in a number of cases, that immediately after an epileptic seizure we may get a typical genuine ankle clonus. It may be as persistent a clonus as you ever see, persistent in the fact that the vibrations keep up so long as the foot is kept in the appropriate position, but not persistent in the sense that you can obtain it repeatedly after the convulsion is over; but it is a condition which may last for from fifteen minutes to a half-hour after the cessation of the epileptic seizure.

I say again "as a rule," because I remember a good many years ago, after I had been examining the reflexes, both superficial and deep in a long series of cases, I once saw a young man at the House of Correction who came up in line in the morning for treatment for some trifling disorder — I do not remember whether to have a tooth pulled or for slight sore throat, or to get a dose of salts or simply to get off work by coming up to see the doctor. I examined his reflexes at the time and found a typical and persistent ankle clonus. I then had him wait until I was through with the line, and made a very careful examination of him in all points, and went very carefully into his history without finding anything to explain the clonus. I ordered him to come up the next day. He came the next day and the clonus had disappeared. I may say that that experience has been wholly unique. I could not explain the cause of his clonus then, and I know no reason for it now. I have seen, so far as I remem-

[3] See page 441 of the Journal.

ber, no similar case. I do not recall any case of genuine clonus in ordinary hysteria.

In looking over my notes of the cases of traumatic hysteria, I have found out of 100 cases four in which I had found clonus. In one of them, however, it was doubtful whether it was a genuine clonus. In the other two there were hysterical symptoms, but in one of them there were symptoms leading to a strong suspicion of spinal caries as well; in the second there was a strong probability that there had been either a slight hemorrhage in the cord (such as has been found by Bailey), and the man had also had syphilis, so that there was the possibility of slight spinal syphilis. The third case was one where I should be by no means ready to accept the diagnosis of hysteria, although the patient presented many striking hysterical symptoms. It was a young fellow about twenty-one, who came to the hospital with general weakness, headache, pain in the back and marked disturbances of sensibility, following a blow on the head. I showed him one day to the class, with a typical right hemianesthesia, with a field of vision contracted down to ten degrees. Two days later I showed him again, and much to my surprise I found he had left hemianesthesia. I thought I had made a mistake in my record of the previous day, but the young man himself and the various men at the clinic confirmed me in the note I had made that two days before it had been a right hemianesthesia. The young man said himself it had shifted. He had a field of vision which would vary from ten degrees to fifty, sixty or seventy degrees, but although those symptoms were strongly suggestive of hysteria, he had a steadily progressive optic atrophy, a pretty marked tremor, which — I think Dr. Courtney will correct me if I am mistaken — was of an intention character, and steadily progressive weakness of the legs, and, furthermore, when he was last under observation he had beginning disturbance of speech, all suggesting multiple sclerosis. In other words, I think that we cannot fully accept the French diagnostic rule, especially in these traumatic cases of which we see so many, presenting hemianesthesia, contracted field, etc., that the hemianesthesia and the contracted field are proof of hysteria. The more cases of alleged traumatic hysteria I see the more doubtful I am whether our diagnostic rules are as yet definite. But when there is a genuine and persistent ankle clonus, which this young man presented, I think that we can safely exclude hysteria unless we find the clonus immediately after a convulsive seizure. Whether it may occur after a hysterical convulsion I do not know, but unless we find the clonus immediately after a convulsion it seems to me to rule out hysteria in the diagnosis.

DR. PRINCE: I do not know that I can add anything to what Dr. Courtney and Dr. Knapp have said. I think that Dr. Courtney has well made out his case, certainly so far as the distinction between hysteria and organic disease is concerned. I should agree with him that this is not a case of hysteria. I do think that Dr. Knapp has argued rather strongly in favor of the possibility of its being multiple sclerosis; it may turn out to be such. The main point of the paper is whether it is or is not hysteria. As to this clonus business, as Dr. Courtney and Dr. Knapp have said, there is a great difference of opinion among neurologists, varying from Sternberg, with ankle clonus in 20 per cent. of cases of hysteria, to Gowers and Mills, who hold it to be very rare. Mills has well summed up the varying opinions of neurologists in the article referred to by the reader. In view of such divergence of opinion amongst trained neurologists, I think we cannot dogmatize in this matter, but even Gowers and Mills admit that ankle clonus does occur in hysteria, though exceptionally. For myself I must agree with Dr. Courtney and Dr. Knapp in the value of persistent clonus as a diagnostic sign of organic disease. I have been in the habit of regarding such a clonus as evidence against hysteria, and in this respect I am in accord with Mills. But Dr. Knapp has mentioned one exception, where it has occurred without organic disease, and if there be one exception there may be others. I have not looked up my cases, but I do not at this moment recall an example of well-marked clonus in a case of hysteria; but others have recorded them. Nevertheless when clonus is present I should want very definite corroborative evidence of hysteria before making that diagnosis.

Perhaps the reason for the differences in the observation of neurologists lies in what shall be considered clonus. Three different types of clonus are described, the "persistent," the "short-lived" and the "spurious." These are often confused in discussions, and I think the reader has not made them clear. There is a tendency with some to minimize the short-lived form, though there is no reason to suppose it is not due to the same increase of myotatic irritability, as is the pronounced persistent type. It is only a question of degree. Even Mills found ankle clonus present in three out of 30 cases of hysteria, but adds, as if to offset this, that it was of the "abortive or short-lived form." To say that this is not true ankle clonus is to beg the question. It is probably the presence of this mild form (which I have been in the habit of describing in my notes as a "tendency to clonus") which has led some to regard clonus as more common in hysteria. The "spurious form" is said to be due to a voluntary contraction of the muscles, but as it also is not persistent the distinction of persistence is given prominence as the distinguishing characteristic, and thus the spurious and short-lived forms are unconsciously confused.

As to the question of knee-jerk it seems to me that not enough distinction is made between the different varieties of hysteria. I think the time will come when we shall classify hysteria from the point of view of symptoms on the same plan by which we divide the organic diseases of the brain, that is, by the localization of the underlying process; but until we have an anatomico-physiological theory of hysteria it will be difficult to do so. At the bottom of hysteria there must be a physiological process of some kind, capable of being localized. We certainly get different types of hysteria according to the different parts of the brain affected, and it seems to me that the French school, in insisting that hysteria is only represented by paralysis, anesthesia and stigmata of that kind, have taken too narrow a view of the disease and have limited it to a special class of cases. I think there are many types of hysteria and some in which there are no stigmata of this kind whatsoever. We must believe that the difference depends on the localization of the process, whatever this process is, in the brain. To say, therefore, that in hysteria you must always have diminished or increased knee-jerks seems to me the same thing as saying that in organic disease of the brain you must

always have increased or diminished knee-jerks, always have paralysis or anesthesia. That would depend entirely upon the localization as well as the nature of the process. So it seems to me it is with hysteria. I think the statistics of my cases would bear out those that Dr. Courtney mentioned, that in hysterical paralysis the knee-jerks are usually diminished on the paralyzed side — not increased as in organic paralysis. On the other hand, in other forms of hysteria where there is no paralysis, where possibly the frontal lobes or some portions of the brain which are not the motor centres are affected, we may have increased knee-jerks from lack of control. In the pure neurasthenic type the knee-jerks are certainly as a rule increased. But we are not yet prepared to say exactly what is the localization of the process in which we get increased or diminished reflexes in hysteria, but it will vary undoubtedly with the location of the process, as in organic disease. Hysteria must depend upon local processes in the brain and with the differentiation of these local processes we shall be able to say with what particular local seats we get increased or diminished knee-jerks. In hysterical hemiplegia we have, in my experience, diminished and not increased knee-jerks, which is in agreement with the statements of French writers.

Dr. Knapp: I should disagree with both Dr. Prince and Dr. Courtney in regard to the diminished or normal knee-jerk in hysteria. In the great majority of cases in my experience it is exaggerated.

Dr. Prince: In the monoplegias and hemiplegias?

Dr. Knapp: In the great majority of all cases of hysteria the knee-jerk is exaggerated, and it has been my experience as a rule that the knee-jerk is more exaggerated upon the paralyzed side in cases of hysterical hemiplegia. There are two opinions brought forward in regard to that, Charcot's and Weir Mitchell's; Charcot having found it as a rule exaggerated and Weir Mitchell in some cases diminished upon the paralyzed side. I have found both forms, but more frequently exaggeration than diminution upon the paralyzed side.

This whole question of the types of hysteria which Dr. Prince has brought forward has been worked out pretty thoroughly, as far as paralysis goes, by Bastian several years ago in his book on functional paralysis. Of course the whole thing is a question of degree. Following a suggestion made by a writer in the *Lancet* some years ago, the variations of the knee-jerk may be classified into four or five degrees: First, complete absence of the knee-jerk, due almost invariably to some structural disease causing a break in the reflex arc. The next degree is the knee-jerk which can be obtained only by reinforcement; then the ordinary knee-jerk; then, fourth, the first degree of exaggeration, associated with a symptom which I have been in the habit of speaking of as patellar twitch — a quick contraction of the quadriceps which seems to be the first stage of exaggeration. Front-tap contraction comes next, and in any case of lively knee-jerk you may also get the ankle phenomenon, which is not so constant a symptom in health. After a front-tap contraction you get a spurious clonus, which is easy to distinguish from the ordinary clonus by the fact that the spurious clonus stops after a dozen or fifteen vibrations, but the genuine clonus keeps on so long as you keep the foot extended. The highest degree is the genuine clonus. The two extremes in the scale I believe almost invariably point to some structural change in the reflex arc; in the case of loss of knee-jerk to a break in the peripheral neurons; in the case of the ankle clonus to a break in the central neuron of the pyramidal tract. Of course in many of the cases of ordinary hemiplegia we get only the exaggeration of the knee-jerk, not going on to a true clonus, and sometimes not even a spurious clonus. We may get the ankle phenomenon in these cases of ordinary hemiplegia, or patellar twitch, or front-tap contraction, with lively knee-jerk, but it is, I should say, rather the exception than the rule that the ordinary hemiplegia shows that degree of spasticity which is attended by a genuine and persistent clonus, and such cases are the bad ones which develop the late contracture. Fortunately the marked contractures in hemiplegia are less common.

Dr. Prince: I think Dr. Knapp must have misunderstood what I said about working out these types of hysteria on the basis of cerebral localization. I was talking about different types of *hysteria*, not of hysterical paralyses alone. These never have been worked out, because nobody knows anything about their localizations. The data do not exist upon which to work them out. From the point of view of cerebral localization, therefore, I think I am right in saying this work remains to be done, because nobody knows anything about it. Sollier has done more in this direction than any one else, but while I believe he is probably right in his view, which I have also advanced, as to the nature of the physiological process, namely, that it is of the same character as that of sleep, still his views of the localization of the process are open to question. The different types of paralysis are well known. They will be found described in any good text-book.

Dr. Courtney: There are one or two points I want to take up in conclusion. Dr. Knapp objects to the diagnosis of ataxic paraplegia and favors *scléroses en plaques* on the ground, first, of age, and, in the second place, of the disturbance of speech and the tremor. This case is thirty-six years of age, and as I remember the classical description of Gowers, he states that the disease is most common between the ages of thirty and forty. He also makes special mention of the fact that the speech may be a trifle slow; not exactly scanning, but approaching scansion. As for the tremor, I look upon that as another manifestation of the pseudosystemic character of the disease — an irregularity in distribution similar to that which accounts for the disturbance of the sensation present. As to the question of the ankle clonus, the spurious type, which has been cited in diseases other than organic, simply fulfils one of the requirements which, to my mind, go to make up a genuine clonus, that is to say, it is persistent at one time, but not at all times, and a clonus which may be persistent after an attack of epilepsy, for instance, certainly would not be present within a week or ten days of that attack. The question of the muscle tonus in cases of hysteria was interestingly brought out in the discussion of Dr. Mills's paper. Dr. Dana spoke of 25 cases he studied two or three years ago, and in the entire number he found the muscle tonus very low, the knee-jerks being diminished rather than increased. One final point not touched upon is this: It seems to me that a distinguishing feature between hysteria and neurasthenia is that in the latter the muscle tonus is apt to be very high and there I am never surprised to find not only

patella-jerk and front-tap contraction but also spurious clonus, a condition more in line with our idea of the essential feature underlying the neurasthenic state, namely, an irritable weakness of the cord centres, especially the reflex centres, and such weakness is, in my opinion, foreign to hysteria.

Recent Literature.

The Gross and Minute Anatomy of the Central Nervous System. By H. C. GORDINIER, A.M., M.D. Pp. xxvi, 589. With 48 full-page plates and 213 other illustrations, many of which are printed in colors. Philadelphia: P. Blakiston, Son & Co. 1899.

It is a somewhat singular and by no means creditable fact that there is no good modern work on the anatomy of the nervous system in the English language, and that only one or two of the smaller foreign works have been translated. A few excellent monographs on special portions of nervous anatomy exist, but for the most part the English-speaking student has had to resort to the works on general anatomy, many of which, with a few notable exceptions, deal with the nervous system in a very unsatisfactory way. As there can be no accurate understanding of the diseases of the nervous system without a thorough knowledge of the anatomy, it is no wonder that the average practitioner is as ignorant of neurology as is unfortunately the case. The present volume is a praiseworthy attempt to remove the reproach that has thus far rested upon English and American neurology. It can hardly be regarded as an original work, but it gives a concise, tolerably clear and in the main fairly satisfactory account of the gross and minute anatomy of the central nervous system. The opening chapter, however, on the histologic (*sic*) elements of the nervous system, is disappointing. No note is taken of the recent histological researches of Apáthy, Bethe, Held and others, and the importance of the neurone as the anatomical unit in the nervous system is not emphasized; indeed, by the position of topics in the chapter and the faulty typographical arrangement, which gives to every topic an equal heading, the neurone is subordinate to its constituent parts. The subsequent chapters are better, although the same defect in typographical arrangement obtains throughout. Many of the illustrations are original, and the work of reproduction has been excellently well done. The selection of illustrations, however, has not always been fortunate. Although the student should be trained to study nature yet we believe that in the study of so complicated an organ as the brain reproductions of photographs of the convolutions and sections of the brain should be supplemented by diagrams, and the diagrams chosen for this purpose are insufficient in number and not well selected. In the study of the convolutions, for example, the distinction between fissures and sulci is not drawn and no reference is made to the exact location of Broca's convolution. In the horizontal sections the representation of the basal ganglia is not always clear, and the external capsule is unmentioned. No good diagram of a frontal section of the cerebrum is given. On the other hand, we have a profusion of microphotographs of cells stained by the Golgi method — excellent in themselves but certainly of little utility to the student. In certain diagrams, too, where color would add greatly to the clearness, as in the diagram of the cerebellar peduncles, on page 205, color is not used. For a text-book to aid the beginner in the study of the anatomy of the nervous system the author has failed to take advantage of two features in instruction which serve as a most excellent aid for the student. By emphasizing the importance of the neurone as the anatomical unit and by bringing into especial prominence the long conducting tracts for motion, sensation, etc., as made up of chains of neurones, the beginner is enormously aided in obtaining a general conception of the architecture of the central nervous system. These subjects are, of course, discussed in the volume before us, but they are not brought into sufficient prominence. The embryology of the nervous system, which throws so much light upon the anatomy, instead of introducing the subject, is put in a subordinate position at the end of the book. A needless chapter on localization and a concise account of the more important methods of technique conclude the book. The mechanical execution of the book is otherwise so good that we fear the author is responsible for the persistent misspelling of proper names, which proves a blemish, such as "Eskeridge," "Monk" and "Ramon y'Cajal." The author, too, is responsible for such mutilations of speech as "histologic" and "anatomic." In spite of certain defects in plan and execution which we have criticised at some length, the book remains a useful manual, good enough to cause us to regret that these defects exist which prevent its being better.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Vol. XVI, "Infectious Diseases." New York: William Wood & Co. 1899.

Vol. XVII preceded Vol. XVI in this series. The present volume, XVI, treats of lobar pneumonia, cerebro-spinal meningitis, dysentery, fevers, inflammation, erysipelas, simple continued fever, relapsing fever, typhoid fever (etiology or general pathology), typhoid fever (symptomatology and treatment). This volume has 785 pages. The first article, on lobar pneumonia, by Dr. Andrew H. Smith, of New York, is a complete and valuable presentation of this very important subject. Dr. Netter, of Paris, deals with cerebro-spinal meningitis in the second article, of 82 pages. This writer has devoted much special study to this disease, especially to its bacteriology and pathogenesis, and more particularly as manifested in its sporadic form; his article also shows that he is well acquainted with the literature of his subject. He has among other memoirs had access to the important report of the Massachusetts Board of Health, by Councilman, Mallory and Wright. He confesses that many points in regard to the disease remain very obscure, and that bacteriology has still left more than one point unsolved. Netter does not agree with Jaegar and Heubner that the diplococcus intracellularis is the sole pathogenic agent in the epidemic cerebro-spinal meningitis, or that the pneumococcus has no influence in its production. Neither does he agree with Wentworth that pneumococcal meningitis is always fatal in contradistinction to the diplococcal meningitis. The etiology of this disease remains more obscure than its pathology or bacteriology.

The last articles of this volume are devoted to typhoid fever, and in correspondence with the importance of the subject occupy 200 pages. Dr. Thacher, of New York, pathologist to the Presbyterian Hospital, deals with its etiology and pathology, and Dr. Brannan, of New York, physician to Bellevue Hospital, discusses its symptomatology and treatment. Both departments of this subject have been entrusted to competent hands. In the pages concerning the history of the disease the labors and the influence of Louis in the elucidation of the especial characteristics of typhoid fever might perhaps have been emphasized a little more.

In a divided treatment of one subject some repetition, as in the pages on perforation, is perhaps inevitable, although a cross reference would avoid a duplication of tables. Brannan accepts the Widal test as in accord with the clinical diagnosis in about 95 per cent. of the cases. The pages on treatment are well up to date. Careful consideration is given to the eliminative treatment, which was practised in its antimonial form by our predecessors in the first third of the century, and of which the Woodbridge treatment is a recent example. Brannan has been rather favorably impressed by his investigations of this treatment, though he would apply it in a less complicated manner than set forth by Woodbridge. He thinks the percentage of mortality would compare favorably with that resulting from cold baths. Keen's conclusions as to operation after perforation are reproduced.

The article on dysentery is by Todré, of Rio de Janeiro; that on fevers by Nicholls, of Dominica; on inflammation, by Ziegler, of Freiburg; on erysipelas, by Kiliani, of New York. The article on relapsing fever is by Popoff, of St. Petersburg, and is very complete.

This volume, as a whole, is a valuable one, and is a distinct addition to the series.

The Diseases of the Nervous System. By Ludwig Hirt, M.D. Translated by August Hoch, M.D., and Frank R. Smith, A.M., M.D. Second edition. Pp. xvi, 716. With 181 illustrations. New York: D. Appleton & Co. 1899.

Although the present work was first presented to the American public in 1893, under high endorsement, it was by no means the best German treatise on nervous diseases that existed in 1889, the date of publication of the original work. At that time we recognized that it had certain merits. The present work, however, is thoroughly out of date. Although dated in 1899 it is a translation from the German edition of 1894, which in spite of the "many changes" announced by the author, was in reality only slightly changed from the first edition. The chapter on tumors of the brain, for example, was revised (!) by a reference to five individual cases and to one article, and the section on treatment is thoroughly inadequate, with scarcely a reference to operation. The chapter on syringomyelia ascribes the clinical discovery of the disease to Morvan (!). The chapter on tabes says nothing of gymnastic treatment. In fact, the deficiencies of the book throughout are so great as to render it an unsafe guide for the student or practitioner. It is to be regretted, with the large number of excellent works on nervous diseases still inaccessible to the English reader, that a second edition of a work so behind our present standpoint of knowledge should be published.

THE BOSTON

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HIGHER MEDICAL EDUCATION.

One of the most hopeful signs in medical education at the present time is the fact that other elements than the purely practical application of knowledge to the treatment of disease are entering more and more into the curriculum. This is highly beneficial, in the first place, because it will ultimately lead to more accurate and hence more successful methods of treatment, and in the second place, because it tends to elevate the standard of medical education to a level comparable with other branches of abstract knowledge. It is quite unnecessary to make any invidious distinction between practical and scientific, as is too often done nowadays; we desire merely to lay stress upon the fact that theoretical and experimental methods must always antedate practical application. It is only in this way that significant progress in medical knowledge and hence in medical practice is made, as may be seen by reference to the history of antisepsis in surgical procedures, or of antitoxin in the treatment of diphtheria. These are gains in knowledge which are permanent, because they rest upon principles capable of valid demonstration.

It is therefore desirable that a higher education in the true sense of the term should be cultivated in our progressive medical centres. Stimulus should be offered for research in the medical sciences, as it is, and has been for many years, in other departments of knowledge. The proposed plan of establishing a school of comparative medicine as one of the departments of Harvard University is a step in the right direction. One of the chief aims of such a school would be to promote and encourage original research of a high order in those sciences which belong in a broad way to medicine. In his address on "Knowledge and Practice" before the Yale Medical School, delivered last June, Prof. C. S. Minot bewailed the small opportunity given the student of medicine to perfect himself in subjects connected with the more theoretic aspects of his work. He writes as follows:

"We must provide post-graduate instruction, with courses thoroughly systematized and correlated, covering at least two years, to qualify men to become professional investigators in the comparative sciences of morphology, physiology, pathology, bacteriology, preventive medicine, etc. It is remarkable that these sciences have never reached a university standing. It ought now to be secured. If a young man wishes to make a scientific career, if his interest is chemistry, physics, botany or zoölogy, he is received at one of our universities, started upon a well planned course properly systematized, he gives for two or three years most of his strength to his main subject, but he follows probably two cognate subjects as minor studies, and at the end of his time, if successful in his work, he receives a degree, which attests his proficiency in his special science. Should the same young man elect to study one of the medical sciences, physiology, pathology or bacteriology, no university will give him corresponding recognition. The utmost he can find is opportunity for advanced work in his special subject, but with no university guidance, no plan of correlated studies, and he can look forward to no degree, nor even to a certificate from the university."

Prof. W. H. Howell, in a letter to *Science*, takes exception to this extreme statement of Professor Minot's and makes the following assertion: "In this University (John Hopkins) from its foundation in 1876, physiology has been given complete university standing. Its courses are co-ordinate in every way with those in chemistry, physics, botany or zoölogy, and many students have offered it, after three or more years of continuous study, as a major object for the degree of Doctor of Philosophy. The same may be said with regard to pathology and bacteriology. I speak only for the Johns Hopkins University, but there are other universities in this country in which physiology is also accorded every privilege in the philosophical faculty."

We think, too, that Professor Minot has gone rather far regarding Harvard University. Conservative as the University has been in this matter of encouraging research in the medical sciences by refraining to bestow the higher degree of Ph.D., there has manifested itself within the last few years a more liberal spirit, so that it is now possible for a properly prepared man to qualify for that degree in several at least of the departments of medicine included under the general head of biology. The previous requirement of residence in Cambridge for a part at least of the term of study has also been modified. Our feeling is, that had there been more demand on the part of medical men for this higher degree the University would before have made provision for it. The Johns Hopkins University has, however, been a pioneer in the recognition of the dignity of the medical sciences as worthy of a high academic degree.

The general fact nevertheless remains, as pointed out by Professor Minot, that universities in general have been exceedingly slow in establishing a standard for investigation in these sciences. There is, however, small question that that time is past, or at least is passing, and that the vigorous demand for academic recognition, through the bestowal of a higher degree, will hereafter meet with a ready response from university authorities. More than in most departments of work, we need in medicine broadly educated men, and we may hardly expect universal recognition as a learned profession until we have a large number of special students working for highest academic recognition. It is from the efforts of such men that real progress is to be expected.

QUARANTINE REGULATIONS.

THE question of quarantine is always one of interest. As our knowledge of infectious disease has grown there has been a certain tendency to exaggerate the dangers of transmission of such diseases to the detriment of the individual and the community. A good example of this over-scrupulousness is the recent attempt in California to lay down quarantine regulations regarding tuberculosis. Fortunately, this altogether unreasonable and unjust scheme has met with the defeat which it deserves. When, however, we come to the consideration of other diseases recognized as being more highly contagious or infectious, it is evident that the problem becomes a very complicated one, with respect to securing the maximum of safety with the minimum of interference with trade.

The details of the question have recently been discussed by Dr. H. R. Carter, of the Marine-Hospital Service, in a document submitted to the surgeon-general of that department, with regard to yellow fever, a disease which is likely to claim a considerable degree of our attention in the immediate future.

Prior to 1897 it had been customary to prohibit the shipment of all merchandise from a town infected with yellow fever, regardless of the nature or extent of the infection. Such a sweeping regulation was manifestly unjust and unnecessary, and in 1897 it was modified at New Orleans to permit of the shipment of certain varieties of freight from the infected town, thereby preventing a complete stagnation of trade. The general principles upon which such a provision is made are as follows: "That in deciding on the imposition of any quarantine measure a balance should be struck between the risk obviated by its adoption and the loss which the measure entails; that we must thus not only consider whether a measure obviates a risk, but whether it entails a loss, and the relation between the two; that in measures of quarantine we do not ask for absolute safety; that it is unattainable, and it will frequently happen that the measures necessary to obviate small risks entail a loss on the communities adopting them greater than the risks thus obviated justify. These restrictions are not in such cases to be imposed."

It is evidently a matter of great delicacy, and requiring a high degree of knowledge, to determine with

fairness between risk to health and loss to trade. Health must always be first considered, but health is not always promoted by stringency; it has, for example, been suggested that very rigid quarantine restrictions, especially if continuing over a considerable time, are sure to involve greater risk to health by the amount of illegitimate communication to which it gives rise. On the other hand, looseness of quarantine regulation is a manifest menace to public health. The recognition of the two sides of the question has led to a careful study of the means of conveyance of infection, and it has been shown that yellow fever is most frequently conveyed from infected places by persons and personal effects, the latter already infected and the former having the fever in the stage of incubation. Articles of merchandise other than personal effects very rarely convey infection. The elements of danger in the shipment of merchandise are a combination of three factors: its exposure to infection; its ability to receive and convey infection, and the measures adopted to free it from infection if exposed. A proper weighing of these elements should in most cases lead to the proper precautionary measures. The classification of merchandise for shipment is now based on the following provisions:

"Articles of merchandise requiring more than superficial disinfection should, as a rule, be prohibited. Practically only superficial disinfection is undertaken. Articles of merchandise requiring more than this should, save in exceptional instances, be prohibited shipment. Not that they are not safe if disinfected, but that it is in general not commercially advisable.

"Articles should not be shipped from dwellings, nor from places contiguous to dwellings, nor from any place believed to be infected.

"All articles shall be new, clean, and dry.

"When fever exists in a sporadic form, merchandise under the above conditions can be shipped.

"The chance of any merchandise, except goods from the few infected residences, conveying infection is *nil*, and there need be no bar on any kind of merchandise fulfilling the above conditions.

"When fever is more than sporadic, but not general, merchandise of the above character may be shipped from the wholesale district of the city, except such as from its liability to infection would be especially apt to conserve it, such as fruit, vegetables in open crates, straw, sawdust, excelsior, and similar articles used for packing. These articles can be shipped only if they have been preserved from possible exposure to infection or have been disinfected. There is still no reasonable risk in merchandise shipped under the above conditions."

Investigations with practical conclusions of this sort are evidently of the greatest value. One's experience need not be extensive to recall instances of the greatest discomfort and annoyance, resulting from over-stringent and quite unnecessary quarantine regulations. Anything which can reduce this source both of personal and commercial annoyance to a minimum demands encouragement, and such work as this of Dr. Carter's will no doubt help greatly toward a rational treatment of the whole quarantine problem.

PROTECTIVE INOCULATION AGAINST TYPHOID.

Surgeon-General Sternberg has recently been approached with reference to adopting the system of protective inoculation against typhoid fever now being carried on with British soldiers prior to their embarkation for South Africa and India, as well as among those already in the latter country. The results in the British service are reported as being very satisfactory, although as yet sufficient data for scientific conclusions are not available. As one instance quoted, it is said that of 200 attendants at the Maidstone Asylum during the recent outbreak at that place 95 were inoculated. Of these none contracted the fever, while of the remaining 105 there were 19 so affected.

The inoculation in the British service is not compulsory, but company commanders are urged to endeavor to induce the men to permit themselves to be inoculated and a large proportion have submitted to the operation. The percentage of enteric fever in the British service will be watched for with interest by all military sanitarians and should it turn out to be unexpectedly small in the present war with the Boers, it is more than likely that other countries sending their troops to regions where typhoid fever is unusually prevalent will follow the example set in the British service. In our own army, as yet, no definite steps have been taken, but the question is undergoing careful investigation.

MEDICAL NOTES.

Quinine for the Army.— It is said that the Government has recently ordered from a wholesale drug-house 7,500,000 grains of quinine for the use of the United States Army.

Medical Opportunities in the Navy. — It is stated that there is at present a good opportunity for doctors desiring to enter the naval service. There are a number of vacancies for the grade of assistant surgeon.

Annual Lecture of the Chicago Society of Internal Medicine. — The annual lecture before a joint meeting of the Chicago Society of Internal Medicine and the Chicago Medical Society will be delivered by Dr. J. G. Adami, of Montreal, November 29th.

California not to Bar Consumptives. — The State Board of Health has decided not to quarantine California against the consumptives of other States. It has adopted a resolution, however, recommending that in all State institutions those afflicted with tuberculosis be separated from the other inmates. This is a very sensible modification of the radical measures of absolute exclusion of all consumptives at first pro-

posed. While tuberculosis is undoubtedly contagious, it is not so to such a degree as to make quarantine regulations advisable. We are quite in accord with the *Medical News*, from which we quote the above statement, in the opinion therein expressed.

HOSPITALS FOR CONSUMPTIVES NOT A SOURCE OF DANGER. — The following resolution, signed by Sir William Broadbent, has been passed by the Council of the National Association for the Prevention of Consumption: "Having understood that apprehension is entertained as to the spread of consumption from sanatoria established for the treatment of this disease, the Council of the National Association for the Prevention of Consumption desire to express their opinion that there is no danger of communication from any well-conducted hospital for consumption, or from any sanatorium where the open-air treatment for this disease is properly carried out; and, further, that the inhabitants of houses in the immediate neighborhood of such institutions are perfectly safe from local propagation from this source." — *Lancet.*

INDIGENT CONSUMPTIVES IN COLORADO. — Active measures are being taken by the Charity Organization Society of Denver, says the *Medical Record*, to lessen the practice of sending indigent consumptives to Colorado. It is charged that physicians in the East advise the removal of patients having no reasonable expectation of benefit from the climate of Colorado, or who have no means to support themselves while getting something to do. These people without money soon become a burden to the charitable societies, and must be supported or returned to their homes at public expense.

SIR WILLIAM MACCORMAC AND MR. FREDERICK TREVES. — Sir William MacCormac and Mr. Frederick Treves have offered their valuable services to the British Government in South Africa and their offers have been accepted. Sir William represents the National Society for Aid to Sick and Wounded in War.

DEATH OF THE BISHOP OF BLOEMFONTEIN. — Bishop Hicks, of Bloemfontein, Orange Free State, died there October 11th, on the eve of the opening of hostilities with England. He originally graduated in medicine in London. He did not enter the church until 1871, when he was thirty-one years old.

HOSPITAL SHIP FOR USE IN SOUTH AFRICA. — It is said that certain American women residing in London, under the leadership of Lady Randolph Churchill, have organized for the purpose of purchasing and equipping a hospital ship for use in the war in South Africa.

ANTI-BRITISH FEELING AT CONTINENTAL HEALTH RESORTS. — The *Lancet* comments editorially upon the marked access of bitter feeling against the British which the Transvaal War has aroused on the Continent — especially among the French, Swiss and Italians — and characterizes it as incredible. Comparison is made with the similar scarce suspected avalanche of jealousy and uncharitableness which the Fashoda incident and our war with Spain seemed to draw down upon the Anglo-Saxon in general. The conclusion is that "It will be no loss to Great Britain, heavy as it may be to the hotel interests abroad, if this renewed and aggravated outburst of anti-British feeling in the Sunny South conduces to a trial of health resorts at home, followed by an appreciation and a development of them which have for far too long been withheld."

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. — The College of Physicians of Philadelphia, through its secretary, Thomas R. Neilson, M.D., announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14, 1900, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1900. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1899 has been awarded to Dr. Robert L. Randolph, of Baltimore, Md., for his essay entitled "The Regeneration of the Crystalline Lens — An Experimental Study."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, November 1, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 59, scarlatina 26, measles 4, typhoid fever 24.

THOMAS L. JENKS, M.D. — Dr. Thomas L. Jenks, well known for many years in public affairs in Boston, died suddenly October 31st. He was born in Conway, N. H., in 1830, and was graduated from the Harvard Medical School in 1854. During the Mexican War he was hospital steward in the navy. He was a member of the Boston Common Council; was in the Legislature as a member of the House in 1870 and 1876. Subsequently he was elected trustee of the City Hospital for five years. He was chairman of the Board of Police Commissioners from 1882 to 1885. He had been president of the College of Pharmacy and was president of the North End Savings Bank of Boston at the time of his death. In 1889 he was appointed chairman of the Board of Commissioners of Public Institutions, and resigned in 1893. During his administration many improvements were instituted. He was a laborious, faithful and economical administrator of the trusts which he assumed.

Meeting of Massachusetts Boards of Health. — The quarterly meeting of the Association of Boards of Health of Massachusetts was held at Leominister, October 26th. Two papers were read, one by Dr. H. W. Hill, of Boston, on "Rapid Diagnosis in Diphtheria by Swab Examinations," and one by Dr. F. L. Morse, of Worcester, on "Infection of Milk and other Articles of Food by Typhoid Bacilli."

Resignation of Dr. J. C. Warren. — At the annual meeting of the Corporation and Board of Managers of the Massachusetts Charitable Eye and Ear Infirmary, Dr. J. Collins Warren, President of the Board, resigned, and Dr. John Homans, 2d, was elected to fill the vacancy.

Small-Pox in Chelsea, Mass. — Three deaths from small-pox have been reported from Chelsea. There have been more than a dozen cases during the present appearance of the disease. Rigid quarantine precautions are being enforced, and free vaccination has been instituted.

Cambridge Schools not to be Closed. — It has been rumored that, owing to the prevalence of diphtheria in Cambridge, it would be necessary to close the schools temporarily. The rumor is without foundation. Special precautions are, however, being taken to insure against a possible spread of the disease.

Cambridge Homes for Aged People. — The new building of the Cambridge Homes for Aged People on Mt. Auburn Street, Cambridge, was dedicated last week. Addresses were made by the Hon. Jabez Fox, Chairman of the Board of Directors; Mayor Champlin, Judge John W. Hammond and President Eliot, of Harvard, also spoke.

The Free Hospital for Women. — The past year, as announced at the annual meeting of the corporation of the hospital, has been one of the most prosperous in its history. From October 1, 1898, to October 1, 1899, 236 patients have been treated; seven nurses have been graduated from the training school. Dr. F. H. Davenport has been retired at his own request from the active work of the hospital, and has been appointed consulting surgeon.

NEW YORK.

New York State Medical Association. — The following officers were elected for the ensuing year: President, Dr. E. D. Ferguson, of Troy; Vice-Presidents, Drs. Charles H. Glidden, of Little Falls, J. M. Farrington, of Binghamton, and J. C. Bierwith, of New York; Treasurer, Dr. E. H. Squibb, of New York; Members of the Council, Drs. W. L. Ayer, Douglas Ayer, E. M. Lyon, Charles Munger, M. W. Townsend and F. H. Wiggin.

Recent Bequests to Medical Institutions. — The following bequests have recently been made to medical institutions in New York: By the will of the late Cornelius Vanderbilt, $50,000 to St. Luke's Hospital; by the will of the late Judge Charles P. Daly, $5,000 to the Northern Dispensary; by the will of the late John O'Brien, the banker, $2,000 each to St. Vincent's Hospital and the New York Foundling Asylum.

Increase of Tuberculosis among Hebrews. — At the twenty-fifth anniversary of the United Hebrew Charities, held on October 25th, Dr. L. K. Frankell, general manager of the association, dwelt in his report on the alarming increase of tuberculosis among the Hebrews of the crowded tenement districts, and stated that owing to inadequate sanitation and the absence of proper interference on the part of the authorities looking to the isolation of subjects of the disease, all attempts of the society to alleviate suffering caused by consumption had been practically futile.

An Unfortunate Mistake. — Michael Hatal, a Hungarian magician, was mortally wounded in the chest while giving a performance in an East Side hall, on October 28th. He was doing the trick of apparently catching in his hands a rifle ball fired at him, and by a blunder the rifle used was loaded with a ball cartridge instead of a blank one.

A New Dam and Reservoir for Jersey City. — On the recommendation of the engineer for the Board, the Street and Water Board of Jersey City has concluded a contract for the construction of a dam and reservoir for supplying the city, to be situated on Rockaway River, near Boonton, N. J. The reservoir will have a capacity of 50,000,000 gallons daily, which can be increased to 75,000,000 when necessary. The tributary water-shed has an area of about 121 miles. The dam will have a height to full-water level above the present bed of the river of 100 feet, or 302.42 feet above high-water mark at Jersey City, and to increase the capacity of the reservoir to 75,000,000 daily it will only be necessary to raise the elevation of the dam to 320 98 feet.

Closing of Schools at Princeton. — The public schools of Princeton, N. J., have been closed for two weeks on account of the appearance of diphtheria in several parts of the town. Professor Brackett, Chairman of the State Board of Health, is authority for the statement that the disease is of a mild type and that it is not believed that many more cases will develop; but it was thought best to close the schools temporarily, as there was reason to suppose that the disease had been diffused by the children attending them.

Miscellany.

FLEAS AND THE TRANSMISSION OF PLAGUE INFECTION.

The rat, as stated in the *Medical Press*, according to Hankin, is the animal by which plague infection is conveyed. But the question which has for some time exercised the minds of the plague authorities is: How is the disease transmitted from the rat to man? A good deal of evidence has lately been collected showing that the agent of infection is the flea. Fleas are

said to infest rats which are dying of plague, and bacilli, corresponding to the plague bacillus, have been discovered in the intestinal contents of fleas obtained from such rats. Again, fleas from plague-afflicted rats have been made the means of communicating the disease to healthy rats; all the experiments, then, undertaken to test this flea hypothesis, have tended to show, almost without doubt, that the flea plays a most important rôle in the dissemination of plague.

THE PATIENT STOMACH.

UNDER this heading the *Medical Press and Circular* makes the following feeling remarks. It is a comfort to realize that we are not all so indiscreet as here depicted:

"The rush of modern civilization leaves little time for the average man to think of anything outside the immediate tether of his own absorbing pursuits. He is content to eat, drink, sleep, and take his pleasures as they come, without encroaching upon the period of his scant recreations by such solid labor as that involved in consecutive thinking. In this way eating and drinking are regarded much as breathing or the complex nervous and muscular acts that take place in walking or talking; all are accepted as matters of course. Indeed, it is just this easy way of treating vital functions that only too often leads to their abuse. Let the reader pause for a few moments and think how he treats, and has been in the habit of treating, his own patient stomach. Does he begin the day with a heavy breakfast, including several cups of strong tea? Does he take a meat luncheon, with wine or other alcoholic drink? Does he indulge in afternoon tea and wind up with a dinner of half a dozen courses, tempered with more alcohol? If a man, does he distribute odd alcoholic drinks over the whole day's programme? If of either sex, is tobacco included in the daily trials of the stomach? A steady course of public dinners would, in time, ruin the digestion of a rhinoceros or an ostrich. The three square meals a day of the average country house quickly upset the digestion of the visitor, who is used to think highly and live plainly. Indeed, no great intellectual activity can be permanently associated with gluttony. The amount of abuse the modern civilized stomach can withstand is an eternal monument to the perfecting powers of the evolutional survival of the fittest."

THE CYCLE AS AN INSTRUMENT OF DIAGNOSIS.

IN a recent issue the *British Medical Journal* publishes the following protest, to which we would most heartily assent:

"We believe that there is a law against scattering poison broadcast, even though the excuse may be that it is only meant for rats. So far, indeed, has the general doctrine that it is illegal to do even a legal act if it is likely to do injury been carried that the scattering of tin tacks on the high road has become a punishable offence, lest, perchance, some cycle tyre may thereby be pricked; and we cannot but feel that if the same principle could be put into operation against those reckless persons who give advice on medical topics, absolutely destructive and poisonous advice, in the lay press, much good would be done. The following pernicious bit of advice seems to have originated in a periodical called *Wheeling*. It was then copied into the *Wheelman*, from which we take it, and no doubt by this time has been reproduced in every cycling journal all round the world. All sorts of people are anxious about their hearts. To anemic girls and bashful youths, to atheromatous old gentlemen and flatulent ladies, to the foolish and the wise, the question not infrequently arises, Is my heart sound? and this is the way in which *Wheeling* would have them solve the question:

> The cyclist who has doubts as to the strength of his heart may easily put the matter to the test by riding up a steep hill as far as possible, and if there is any heart weakness a sharp pain will strike him in the back, between the shoulders. If the pain does not appear, the cyclist may take it that his heart is practically sound.

"Could anything be more absurd? and could anything be more dangerous? The occurrence of such a pain would not be the slightest proof of the existence of either disease or "weakness" of the heart, and if it sent a few anxious anemics and dyspeptics to the doctors no harm would be done. But when there is reason to suspect 'heart weakness'—which means heart disease if it means anything—to test it 'by riding up a steep hill as far as possible,' and by the endeavor to produce a symptom which, if cardiac at all, can only mean strain and probably permanent injury to the heart muscle, would be absolutely suicidal. And all for nothing; for there are fifty ways in which a man, even though suffering from heart disease, may be pulled up without the production of this wonderful sign; so that he may go away rejoicing that he is 'practically sound,' although he may be actually diseased. When one considers the care which has to be exercised by even the most skilful physician to ascertain the soundness of the heart, and when one remembers that in cases where the heart is not quite right, although fully capable of doing good work for years with reasonable care, such an experiment as is suggested by *Wheeling* would be likely to set up a dilatation never to be recovered from, and to bring on all the miseries of premature heart failure, we find it difficult to discover fitting words to describe the wrong done to thoughtless people by the reckless dissemination of such advice."

MILITARY SANITATION IN PUERTO RICO.

GENERAL Orders No 151, dated San Juan, Puerto Rico, September 27, 1899, makes a distinct advance in military sanitation, and contains many provisions which might with advantage be adopted in our own supposedly more enlightened communities.

The value of the requirements noted below concerning the maintenance of proper cleanliness in all stores where food is offered for sale will be at once appreciated by all persons familiar with the conditions obtaining in Spanish-American countries. Milk is probably not adulterated to any great extent, and even in towns as large as Ponce the cows are driven to the residence of the customer and then milked. It is said, however, that in the past an occasional clever rascal has been known to secrete in his sleeve a conveniently shaped rubber bulb containing water, and thus dilute

the milk during the operation of milking, undetected except by the closest scrutiny. The requirement that all secret or proprietary preparations must bear upon each bottle the exact formula used in their manufacture will be a severe blow to the patent medicine manufacturers of the United States, who have hitherto held a lucrative trade in Puerto Rico, and will undoubtedly excite their active hostility. As in this country, pharmacists in Puerto Rico are universally prescribers, and as they are largely men of no great education, it is with probable detriment to the general health. The provisions of the order are as follow:

(1) Foods and drinks in the meaning of this order are all articles used for food or drink by man, whether simple or compound. The term "drug" includes all medicines used by man, whether for internal or external use.

(2) No adulterated article of food or drink shall be made or sold in Puerto Rico; articles ordinarily recognized as food, which are really mixtures, may be sold if marked with the word "mixture" or "compound." No diseased, decomposed, offensive or unclean article shall be used in the manufacture of any food, drink or medicine.

(3) No person shall sell in Puerto Rico any impure, diseased, decayed or unwholesome provisions, or any adulterated bread, or any food substance mixed with poisonous substance.

(4) No person, whether owner, manager, keeper or agent, bartender or clerk, in any saloon, restaurant, boarding or eating house in Puerto Rico, shall offer for sale any food or drink containing anything poisonous or unwholesome.

(5) No person owning, renting or leasing any stall, room or stand where milk, meat, vegetables or groceries are sold as food shall fail to keep said room, stall or stand in a cleanly condition, nor shall such persons allow such milk, meats, vegetables or groceries to become poisonous or infected or unfit for food by reason of uncleanly condition of such stall, room or stand.

(6) No person shall offer for sale in Puerto Rico any unwholesome, watered or adulterated milk, or milk produced from cows which are visibly diseased, or are kept upon and fed on garbage, swill or other deleterious substance.

(7) No person shall sell any article of food or drug which is not of the nature, substance and quality of the substance demanded by any purchaser. And no person shall sell any compound food or drug which is not composed of ingredients in accordance with the demand of the purchaser.

(8) No person in Puerto Rico shall subtract from any article of food any part of it, so as to affect injuriously its quality, substance or nature; and no person shall sell any article so altered without making disclosure of the alteration.

(9) All drugs sold must be of the standard quality and strength prescribed in the Spanish or United States pharmacopeias.

(10) All compound, proprietary, patent or secret remedies sold in Puerto Rico shall bear upon the bottle, box or package an exact formula, stating the constituents of the medicine or remedy.

(11) No pharmacist not a legally qualified physician shall prescribe remedies for the sick. Every bottle, box or package containing any medicine or drug shall be labelled with the name of the same, and with the name of the physician who wrote the prescription. Pharmacists shall not sell arsenic or strychnine, or their compounds, or other drugs commonly known as deadly poisons, except upon the prescription of legally qualified physicians. Before such sale is made the name of the drug and the quantity, the name of the physician prescribing, and also the name of the purchaser, shall be entered in a book especially kept for this purpose. The purchaser shall sign his name in a book below the entry made by the druggist. Every bottle, box or package containing a dangerous drug shall be distinctly labelled "Poison," and the person shall be warned of the nature of the article.

Correspondence.

WARNING.

MR. EDITOR: — An elderly man of respectable appearance, calling himself Dr. T. F. Allen, is visiting physicians and others, seeking aid under false representations. He states that he is a physician from St. Louis, who has lost his money, and often only wishes the means to telegraph to his home for necessary funds to proceed upon his journey. He is a tall man, with white chin whiskers, shaved upon the cheeks and has a rather suspiciously florid countenance.

He claims to be a Freemason, a member of Keystone Lodge, No. 243, at St. Louis, Mo., and on asking the Grand Secretary of the Massachusetts Grand Lodge in regard to such an individual, I was shown a printed description of the same man, who was pronounced an *imposter* in a circular published by a Masonic Bureau, dating over two years ago.

Another dangerous imposter is a young man of dapper appearance and good address who professes to be from Baltimore, and that he is momentarily "strapped." He only wishes a temporary loan which he will repay in a few days. I should not think it necessary to call attention to this man had he not succeeded in deluding some of our profession into giving him money.

ALBERT N. BLODGETT, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 21, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1109	375	9.36	15.57	2.61	1.98	3.06
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,366,832	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	163	48	11.54	14.64	1.22	4.88	3.66
Baltimore	806,389	168	51	12.00	8.40	4.20	4 20	2.40
Cincinnati	405,000	93	—	16.20	10.80	5.40	4.32	5.40
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	365,000	87	26	16.10	16.10	8.00	6.90	—
Washington	277,000	83	33	13.20	12.00	3.60	2.40	3.60
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	54	17	12.95	7.40	9 25	—	1.85
Nashville	87,754	28	4	17.85	7.14	3.57	3.57	10.71
Charleston	65,165	28	10	3.57	—	—	3.57	—
Worcester	111,732	33	16	6.06	9.09	—	6.06	—
Fall River	103,142	24	11	12.48	12 48	8.32	4.16	—
Cambridge	92,520	—	—	—	—	—	—	—
Lowell	90,114	25	3	8.00	16.00	—	4.00	4.00
New Bedford	70,511	20	4	5.00	5.00	5.00	—	—
Lynn	69,218	12	4	25.00	—	—	16.66	8.33
Somerville	64,394	15	2	—	20.00	—	—	—
Lawrence	59,072	25	13	24.00	4.00	8.00	4.00	8.00
Springfield	58,266	17	5	41.16	—	—	—	—
Holyoke	44,510	14	8	14.28	7.14	7.14	—	—
Brockton	38,759	8	—	—	12.50	—	—	—
Salem	37,723	16	4	18.75	—	—	6.25	12.50
Malden	36,421	7	—	14.28	14.28	—	—	—
Chelsea	34,235	5	1	—	—	—	—	—
Haverhill	32,651	9	2	—	—	—	—	—
Gloucester	31,426	3	3	—	—	—	—	—
Fitchburg	30,523	12	8	—	16 66	—	—	—
Newton	30,461	10	3	10.00	—	—	—	—
Taunton	28,527	6	1	16.66	33.33	16.66	—	—
Everett	28,102	6	3	16.66	—	16.66	—	—
Quincy	24,578	4	1	25.00	50.00	—	—	—
Pittsfield	23,421	2	—	—	50.00	—	—	—
Waltham	22,791	4	—	50.00	—	—	50.00	—
North Adams	21,583	8	2	—	—	—	—	—
Chicopee	18,316	4	1	25.00	—	25.00	—	—
Medford	17,190	1	1	—	—	—	—	—
Newburyport	15,636	5	2	—	—	—	—	—
Melrose	14,721	3	—	—	—	—	—	—

Deaths reported 2,018; under five years of age 663; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 230, acute lung diseases 230, consumption 226, diphtheria and croup 70, diarrheal diseases 69, typhoid fever 61, cerebro-spinal meningitis 7, scarlet fever 15, measles 4, erysipelas and whooping-cough 2 each.

From scarlet fever New York 6, Boston, Baltimore, Cincinnati, Washington, Providence, Springfield, Holyoke, Newton and Everett 1 each. From cerebro-spinal meningitis New York, Boston and Washington 2 each, Malden 1. From measles New York 3, Pittsburg 1. From erysipelas New York and Pittsburg 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 14th, the death-rate was 18.7. Deaths reported 4,080: acute diseases of the respiratory organs (London) 275, diarrhea 137, diphtheria 101, fever 69, measles 49, whooping-cough 41, scarlet fever 36, small-pox (Hull) 4.

The death-rates ranged from 11.5 in Norwich to 25.5 in Liverpool; Birmingham 17.2, Bradford 18.1, Cardiff 15.2, Gateshead 18.1, Hull 20.9, Leeds 16.0, London 18.8, Newcastle-on-Tyne 16.6, Nottingham 20.5, Sheffield 19.6, West Ham 13.5.

METEOROLOGICAL RECORD

For the week ending October 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...15	30.29	64	73	55	85	86	86	W.	E.	10	3	O.	C.	
M..16	30.39	56	58	53	93	88	90	N.E.	S.E.	12	8	O.	C.	
T...17	30.16	57	65	49	92	90	89	N.W.	S.	1	7	O.	O.	
W..18	29.89	66	72	61	90	96	93	S.	W.	6	6	O.	O.	.40
T...19	30.09	64	72	56	76	48	62	N.W.	W.	14	6	C.	C.	
F...20	30.23	46	56	37	90	62	76	N.	N.W.	10	11	R.	C.	.09
S...21	30.41	40	46	34	66	54	60	W.	N.W.	15	12	F.	C.	

* O, cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 27, 1899.

M. C. DRENNAN, assistant medical director, promoted to medical director.

J. C. WISE, medical inspector, ordered to duty as member of the Naval Examining Board, Washington, D. C., November 1st.

W. A. MCCLURG, surgeon, detached from duty as member of the Naval Examining Board, Washington, D. C., November 1st, and ordered h me and to be ready for orders for sea service.

C. E. RIGGS, passed assistant surgeon, ordered to the Marine Recruiting Rendezvous, New York, November 1st.

M. C. DRENNAN, medical director, retired October 24th; Section 1453, Revised Statutes and Section 11, Navy Personnel Law.

C. J. CLEBORNE, medical director, detached from duty in charge of the Naval Hospital, Philadelphia, Pa., November 1st, and ordered to Washi gton, D. C., November 2d, for examination for retirement and then home to wait orders.

R. A. MARMION, medical inspector, ordered to duty in charge of Naval Hospital, Philadelphia, Pa., November 1st.

C. H. T. LOWNDES, passed assistant surgeon, detached from the "Princeton" and ordered home by the first public conveyance.

O. M. EAKINS, assistant surgeon, appointed from October 21st.

J. C. BOYD, assistant medical inspector, promoted to medical inspector.

R. C. HOLCOMB, assistant surgeon, detached from duty at the Naval Academy, Annapolis, Md., and ordered to "Solace," November 9th, for duty in connection with battali n of marines for Manila.

R. SPEAR, assistant surgeon, detached from "New York," home and sick leave two months.

(CHANGES FROM ASIATIC STATION BY CABLEGRAM.)

M. V. STONE, assistant surgeon, detached from "Brutus" and ordered to the island of Guam.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING OCTOBER 26, 1899.

IRWIN, FAIRFAX, surgeon. To report at Washington, D. C., for special temporary duty. October 25, 1899.

BANKS, C. E., surgeon. Granted leave of absence for four days. October 25, 1899.

KINYOUN, J. J., surgeon. To inspect unserviceable property at San Francisco, Cal. October 21, 1899.

GUITERAS, G. M., passed assistant surgeon. Detailed as temporary quarantine officer at Havana, Cuba. October 23, 1899.

YOUNG, G. B., passed assistant surgeon. To proceed to Baltimore, Md., for special temporary duty. October 20, 1899.

ROSENAU, M. J., passed assistant surgeon. To rejoin station at Washington, D. C. October 20, 1899.

SPRAGUE, E. K., passed assistant surgeon. Detailed to represent Service as technical delegate at meeting of American Public Health Association (Laboratory Committee), at Minneapolis, Minn., October 30 to November 3 (inclusive), 1899. October 24, 1899.

COFER, L. E., assistant surgeon. Relieved from temporary duty at Mexico, Mex., to take effect on or about November 15, 1899, and to rejoin station at San Diego, Cal., transferring command thereof to Assistant Surgeon C. E. DECKER, then to proceed to San Pedro, Cal., and assume command of the Service. October 26, 1899.

MCMULLEN, JOHN, assistant surgeon. To rejoin station at Louisville, Ky. October 20, 1899.

FOSTER, M. H., assistant surgeon. To inspect unserviceable property at Port Townsend, Washington. October 21, 1899.

HEISER, V. G., assistant surgeon. To proceed to Alexandria and Cairo, Egypt, for special temporary duty. October 23, 1899.

HALLET, E. B., acting assistant surgeon. Granted leave of absence for four days. October 23, 1899. Granted extension of leave of absence for two days. October 24, 1899.

RICHARDSON, S. W., hospital steward. Granted leave of absence for ten days from November 14, 1899. October 24, 1899.

PECK, F. H., hospital steward. To proceed to Miami, Fla., for special temporary duty. October 25, 1899.

APPOINTMENT.

EUGENE A. DARLING, M.D., has been appointed bacteriologist of the Cambridge Board of Health.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 6th, at 8 o'clock.

Dr. Benj. Tenney will report an "Unusual Case of Appendicitis."

Dr. F. C. Cobb will read a paper upon "Epistaxis." Discussion by Dr. Farlow, Dr. DeBlois and others.

A. K. STONE, M.D., *Secretary*, 657 Boylston St.

RECENT DEATHS

THOMAS LEIGHTON JENKS, M.D., M.M.S.S., died in Boston, October 31, 1899, aged sixty-nine years.

PHILIP SCHERB, M.D., of New York, died on October 21st, of acute cerebral inflammation. He was forty-one years old and was born in New York City. He was graduated from the Medical Department of Columbia Unive sity in 1884.

BOOKS AND PAMPHLETS RECEIVED.

A Compend of Gynecology. By William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic. With illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

The Bacteriology of the Accessory Sinuses of the Nose in Diphtheria and Scarlet Fever. Scarlet Fever: Its Bacteriology and Gross and Minute Anatomy. By Richard Mills Pearce, M.D., Boston. Reprints. 1899.

A Text-book of Physiology. By Winfield S. Hall, Ph.D. (Leipzig), M.D. (Leipzig), Professor of Physiology, Northwestern University Medical School, Chicago. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1899.

Empyema of the Gall-Bladder. Rubber Gloves or Gauntlets: Their Use by Physicians and Surgeons. Nephro-ureterectomy for Traumatic Hæmato-hydro-nephro-ureterosis. By John E. Summers, Jr., M.D., Omaha, Neb. Reprints. 1899.

True Conservatism in Gynecology. Operations during Pregnancy. Alexander's Operation. The History of the Early Operations for Fibroid Tumors. Progress in Gynecology. By Charles P. Noble, M.D., of Philadelphia, Pa. Reprints. 1899.

General Pathology, or the Science of the Causes, Nature and Course of the Pathological Disturbances which Occur in the Living Subject. By Dr. Ernst Ziegler. Translated from the ninth revised German edition by Drs. Theodore Dunham, Edward M. Foote, Philip H. Hiss, Jr., and others. Editor, Dr Albert H. Buck, New York. New York: Wm. Wood & Co 1899.

Original Articles.

CRIMINAL ABORTION, WITH A "DYING DECLARATION."[1]

BY F. W. DRAPER, M.D., BOSTON,
Medical Examiner.

The credibility of the statements made under a sense of impending death by the victims of homicidal violence has been recognized and admitted by the courts for many years. Properly authenticated by testimony, these "dying declarations," as they are called, have all the force of sworn depositions and are regarded as equally good evidence. Though made out of the presence of the persons accused, they are held to be admissible and are an exception to the legal rules governing hearsay testimony.

The principle on which the validity of this kind of evidence rests is a very ancient one and was derived from the Roman law. It is based on the fact that these declarations are made when the person making them is about to die, when every motive to falsehood is silenced, when the opportunity for personal advantage is slipping away momentarily and the mind is induced by the most powerful and solemn considerations to state the truth. Shakespeare well expresses the situation in these words:[2]

> "Have I not hideous death within my view?
> What in the world should make me now deceive,
> Since I must lose the use of all deceit?"

A situation of such a character is considered in law as creating an obligation to be truthful to which an oath cannot give any additional force.

But in order that the statements of the dying patient, the victim of unlawful violence, shall have the desired effect and validity, the conditions prerequisite are very exacting. Unless these conditions are fulfilled and are so made to appear very clearly, the court will exclude the dying declaration as incompetent. I cannot do better in this connection than to quote a few words from Greenleaf, whose work on the "Law of Evidence" is a leading authority. He says:[3] "It is essential to the admissibility of these declarations, and is a preliminary fact to be proved by the party offering them in evidence, that they were made under a sense of impending death, but it is not necessary that they should be stated at the time to be so made. It is enough if it satisfactorily appears in any mode that they were made under that sanction, whether it be directly proved by the express language of the declarant, or be inferred from his evident danger, or the opinions of the medical or other attendants, stated to him, or from his conduct, or other circumstances of the case, all of which are resorted to in order to ascertain the state of the declarant's mind. The length of time which elapsed between the declaration and the death of the declarant furnishes no rule for the admission or rejection of the evidence. . . . It is the *impression* of almost immediate dissolution, and not the rapid succession of death, in point of fact, that makes the testimony admissible. Therefore, when it appears that the deceased, at the time of the declaration, had any expectation or hope of recovery, however slight it may have been, and though death actually ensued an hour afterward, the declaration is inadmissible. On the other hand, a belief that he will not recover is not in itself sufficient unless there be also a prospect of 'almost immediate dissolution.'"

And Chief Justice Shaw, in instructing a jury in a leading case,[4] used these words: "Where a person has been injured in such a way that his testimony cannot be had in the customary way, the usual and ordinary rules of evidence must, from the necessity of the case, be departed from. The point first to be established is that the person whose dying declarations are sought to be admitted was conscious that he was near his end at the time of making them, for this is supposed to create a solemnity equivalent to an oath. If this fact be satisfactorily established, and if the declarations are made freely and voluntarily and without coercion, they may be admitted as competent evidence."

In 1889 the Legislature of Massachusetts extended the scope of this variety of evidence, so that, in addition to its admissibility in trials for homicide, it is now available in the prosecution of indictments for criminal abortion. With commendable sagacity and under an appreciation of the very great difficulties which beset the proof of culpability in abortion cases, the General Court has very materially helped in securing the conviction of offenders of this class, by enacting that the dying declarations of those who have submitted themselves to criminal procedures for inducing miscarriage may be received as evidence.

It is obvious from what has preceded that the relation of medical men to this kind of evidence is at once delicate and responsible in the highest degree. Physicians have it largely in their power to render dying declarations fruitful and of great service; and it is, on the other hand, quite possible, through their carelessness or their ignorance of the essential and exacting conditions involved, to make what otherwise would be useful entirely sterile and valueless. As the medical attendant of the dying victim of an abortion stands at her bedside, perhaps at his very first visit after the abortionist's performances within her pelvis, he has it under his control to do then and there, in the fleeting moments of the end of her life, that which will secure the prompt conviction of the offender. He sees that his patient is about to die. He observes her mental condition. He takes note that her answers, though slow and difficult, are intelligible and rational; she is neither delirious nor irresponsive. From his lips comes now to her the inexorable word which, difficult for him to utter and hard for her to hear, takes away from her any hope of recovery. He awaits her first utterance after this fateful announcement. If that utterance expresses a realization and belief that expectation of living is abandoned, then the statements that follow are a "dying declaration," and the physician is the one who receives them, records them as they are made and repeats them later in court.

It is he, then, who makes clear at the trial the exact circumstances under which the dying patient made her statement; it is he who represents her in the evidence as though she herself were on the witness-stand; it is he who repeats her words; it is he who defines with precision the mental and physical condition of the patient when those words were spoken.

In this connection, certain negative considerations

[1] Read before the Massachusetts Medico-Legal Society, June 13, 1899.
[2] Richard II.
[3] Law of Evidence, Section 158.
[4] Commonwealth vs. Casey, 11 Cushing, page 417.

relating to dying statements may be usefully remembered.

For example, it is not essential to their validity that they should be reduced to writing or that they should be signed by the declarant; but it is obvious that their value is very greatly increased by this precaution and the comfort and effectiveness of the medical witness who has received them and authenticates them on the witness-stand is immensely aided by the notes which he has made on the spot and by his carefully written record of the very words which the deceased person used.

Again, it is not the State which is the sole beneficiary of dying declarations; such declarations are equally competent and forceful when they help an accused defendant as when they help the prosecution, and the person to whom the declaration was made cannot exercise discretion as to omitting any part of it from his testimony. The "whole truth" is required.

"It is not an objection to the admissibility of dying declarations that they were made in answer to leading questions or obtained by pressing and earnest solicitation."[5] But the medical man who consults his personal well-being and looks into the future far enough to see himself on the witness-stand will avoid the methods of cross-examination, will resist temptation to exhaustive questioning, and will receive as an almost passive recorder whatever is imparted; for his zeal to get all the truth possible, and to obtain from the dying patient, before it is too late, all the facts, will surely be misinterpreted and made to appear to his disadvantage as a medical advocate.

Finally, it is not essential that the dying declarant should express his replies in words. The courts have admitted statements in which a pressure of the hand, a movement of the head, or any similar mode of communication took the place of spoken words.

After this too lengthy introduction, I am glad to report to the Society a recent case of criminal abortion which was tried in this county. My satisfaction in making this report is the greater for two reasons: the abortionists were found guilty, and their conviction was very largely due to the altogether admirable and acceptable manner in which the victim's dying declaration was obtained, and was later laid before the jury. The case is an object lesson and deserves sympathetic recognition by medical men.

Late in the afternoon of Thursday, March 16th of the current year, a married woman of 26 was admitted as a patient at the Boston City Hospital, the information accompanying her being to the effect that she was suffering from the consequences of a miscarriage unlawfully induced. She was brought in an ambulance, and on her assignment to a bed was seen in a few minutes by Dr. Mackay, the house physician. He appreciated immediately that her condition was alarming and that her death was imminent. She was very weak, was inclined to sink into a drowsy torpor, from which she was readily aroused, presented a cold surface, and had a temperature of 99.6° and a thready pulse of 120. There was pelvic tenderness and a foul vaginal discharge.

Here, then, was a medico-legal emergency requiring prompt action, tact and an intelligent appreciation of the exacting precautions requisite, under the law, to make this woman's statements of any use as evidence. Fortunately, the attendant possessed all three of these qualifications, and he managed the crisis with commendable success. His first act was to call to his aid from the administration office of the hospital Dr. Charles B. Knight, the first executive assistant. To Dr. Knight the patient's condition was manifestly desperate, and he agreed with Dr. Mackay that if a dying declaration was to be had at all, this was the time, without further delay. Dr. Knight then said to the patient, "You are a very sick woman. There is no chance of your recovery." She replied in low tones, scarcely audible, "I realize it." She was then asked if she wished to make a statement of the circumstances of her sickness, and she assented and gave her story, partly in answer to questions and partly without such aid, her answers being noted as they were spoken. These notes were then written out in proper form on the spot, and were read to her. She said she did not wish to change a word of the statement and added her signature to it. This declaration was as follows, including, without change, its crudities of expression and some obvious inaccuracies.

BOSTON CITY HOSPITAL, March 16, 1899.

I, Frances Adams, twenty-six years old, married seven years, believing that this is my last and most truthful statement, do assert that a week ago yesterday, that is, Wednesday, I went to Mrs. B. F. Barrows or Mrs. F. B. Barrows, 339 Washington St. She was a small-sized woman, dark complected, about thirty-eight years old, with dark hair. I waited a few moments, and then she took me upstairs to her private bedroom. (I was recommended to her once before, about seven months ago. She did not do anything for me at that time, because I did not have enough money.) She told me I could take my clothes off or leave them on, and to lay down upon the bed on my side. She passed an instrument with a wire in it up as far as she could and it remained until the blood and pains came. The hard pains began at Thursday noon and continued till Friday at 6 o'clock, and then the child, clots and afterbirth came away. I remained at her house till the ambulance called for me to-day, bringing me here. My husband got Dr. D. F. or F. D. Simmons and sneaked him into the house, and Dr. Simmons called the ambulance.

Information of this affair was at once sent by telephone to the police, and in less than two hours the woman Barrows was standing by the patient's bedside at the hospital, under the escort of a patrolman. The patient's identification of the offender was complete. The latter's only comment was, "There must be some mistake. This is a poor way to repay an act of neighborly kindness."

In the interval between the completion of the dying declaration and the arrival of the alleged culprit named therein, the patient reinforced and enlarged the information previously given. She said, among other things, that before Mrs. Barrows passed the instrument into her womb and left it there, her husband, Barrows, had tried to do the same thing but his attempts were ineffectual, and he handed the catheter to his partner-in-mischief to accomplish what he had failed to do. As the immediate result of this later statement, Barrows was at once arrested and made co-defendant with his wife, as he was just before her partner in felony.

The rest of the story is soon told. Though there was some temporary improvement in the condition of the Adams woman as the effect of judicious treatment, wise stimulation and skilful nursing, aided by the mental relief that comes from an unburdened con-

[5] Greenleaf: Law of Evidence.

science, septicemia was persistently doing its deadly work. On the last day of March, fifteen days after her admission to the hospital and twenty-three days after the criminal operation, she died.

The medical examiner's relations to this case, which now for the first time demanded his notice, were really of secondary consequence. The lapse of time, thorough curetting of the interior of the womb, persistent aseptic douching and reparative processes had obliterated the initial lesions, if any such existed, which the passage of the catheter into and through the os uteri had left, so that the autopsy added little in the way of evidence to what was already known through clinical and detective observation. The pathological features may be summarized thus: Sallow skin, with numerous petechiæ about the neck and upper thoracic region; milk in the breasts, with marked dark-brown areolar pigmentation and swollen sebaceous glands; many punctate subpericardial hemorrhages and a single small pyemic centre in the left ventricle; thickening, reddening and fraying at the edge of the anterior cusp of the aortic valve; septic foci in the back of the right lung and back of the left lung; well-marked infarction of the spleen; septic inflammation of both kidneys, with some minute pyemic or embolic foci; a thrombus in the lower part of the vena cava inferior, nearly obliterating its lumen and forming an obstruction an inch long, with firm periphery adherent, except at its posterior surface, to the vessel's walls. The pathogenic micro-organism was the streptococcus.

The peritoneum was normal. The womb was enlarged to a length of four and a half inches and a breadth of three and a half inches; its interior was dry, smooth, and only moderately reddened; at its fundus posteriorly was the clearly defined remnant of a placenta; the right ovary contained a corpus luteum, small in size but typical in structure and aspect. The brain was moist and pale.

The conclusions which the autopsy indicated were: (1) that the woman had recently been pregnant; (2) that she had recently miscarried, and (3) that the cause of her death was septic infection and inflammation consequent upon the miscarriage. The medical examiner could not say and did not attempt to say, that his observations, independently of any other proof, gave any evidence that the abortion was due to instrumental and unlawful interference with the pregnancy; he admitted that, so far as the anatomical appearances were concerned, the miscarriage might have been a purely accidental one. But on the other hand, it was clearly his belief that all the lesions which he found were consistent with the view that the initial cause of the woman's miscarriage and death was the introduction of a dirty catheter, held in dirty hands, into her pregnant womb, with lack of proper care immediately after.

The usual judicial processes followed in due form and resulted in an indictment in which both the man and woman, Barrows and his wife, were named as defendants. Their trial came in less than two months after the act of which they were accused. Justice, for once, was speedy. The interest of the trial centred almost wholly about the dying declaration of the victim of the crime and the circumstances under which it was sought and obtained. It was useless to assail it or to question its credibility. Even the pathetic denial of the Barrows woman on the witness-stand that she was guilty of the charge, or that she knew anything of the miscarriage or its cause before she was called to give some neighborly service after it was all over, did not avail to contradict the solemn assertions from lips now dead and sealed. The jury's conclusions were aided and reinforced by testimony as to the character and pretensions of the two defendants. To everybody except "ladies in trouble," Barrows was a house painter; his wife worked in a jeweller's shop. But their activities were not limited to these commonplace vocations. Printed cards found in their trunk stated that "magnetic and electric treatments for all female weaknesses, leucorrhea, suppressions, cancer, tumor, etc.," were to be had at their place of business, and that "female irregularities" were "a specialty." So far as appeared, the pharmacological knowledge of this altruistic pair lay concealed in one list of drugs in a memorandum found with the cards; this list contained pennyroyal, ergot, cotton root and tansy in suggestive association and bearing the label "emmenagogue." The jury's deliberations were brief and the verdict was soon reached, both defendants being found guilty. The man was sentenced to State prison for seven or nine years and the woman is in Sherborn Reformatory for five years.

It has seemed to me desirable that this case should have a place in the records of this Society because of its unusual features. It was unusual because justice was done so quickly and unerringly, all the processes of the law being swift and sure from start to finish, thus making the affair an exceptional one in its class. It was unusual, also, because of the discreet and faithful manner in which the dying declaration was obtained, and it is especially for the purpose of presenting this conspicuous example of successful medico-legal practice in a trying situation that this paper is offered.

A CASE OF PTOMAINE POISONING.[1]

BY H. G. BLAKE, M.D., WOBURN, MASS.,
Medical Examiner.

Cases of ptomaine poisoning are reported from time to time in the medical journals and elsewhere, and may become of practical interest to the medical examiner. Most of those cases are mild and escape his attention, but a considerable proportion are fatal, and these are of great interest to him on account of the obscurity that has hitherto involved this subject. Gradually this obscurity is being dispelled, but enough uncertainty still exists to make a record of such cases of great value. The following case suggesting ptomaine poisoning came to my notice as part of my regular work as medical examiner and I will give a brief description of it, as the circumstances under which it occurred are peculiar.

I was summoned by Dr. K., of Woburn, who had been called in the absence of the regular attending physician, October 17, 1898; also, in a short time, by the undertaker through Officer Walsh. I saw the body at 2.30 A. M., Monday, October 7, 1898. A patient of Dr. C., of Woburn, Mary M., thirty-six years of age. There was nothing remarkable about the external appearance of the body. It was lying on a bed, with the head toward the foot. On the same bed was a sister, Kate, lying sick in the natural position with her head on the pillow. She was con-

[1] Read before the Massachusetts Medico-Legal Society, June 13, 1899.

scious, in no distress, but weak. Several men, said to be brothers, were in an adjoining room; a married sister and one or two women were in the sick-room.

The statement of the married sister, who was taking care of the girl, was that both were taken sick Saturday evening, October 8th, after a visit to Boston. Their dinner, bought in Boston, and eaten at home about 4 P. M., consisted of one and one-half pounds of raw Bologna sausage, which the girls prepared themselves and ate alone, the rest of the family being absent. They began to have nausea and vomiting some time that evening (the exact time could not be determined). There was vomiting, no diarrhea, not much pain; later contraction of the hands and feet, vertigo and general depression. They continued sick until Wednesday, October 12th, when Dr. C. was summoned. He considered them seriously sick and made several visits, but found them apparently much better the day before the death of the younger. They were taken worse at night, October 16th, and the younger died at 10 P. M. the same night. The vomitus, which had not been saved, the vomiting having ceased a day or two before death, was said to have been green bile. The clothing had been stained, but was in the wash. None of the original food could be obtained. Nothing was seen that was thought suitable for analysis.

Dr. K. stated that he did not know hardly whether it was a case for the medical examiner or not, but that he decided to inform me of the case.

In the morning Dr. C. said that he did not think it a case for me, that the case was one of simple gastritis. He had attended the family for fifteen years. The two girls were highly hysterical. They were always together, one never being seen on the street alone. If one was sick the other immediately came down with similar symptoms. When one began to menstruate the other usually came around too. He had repeatedly treated them for nervous symptoms at these periods. They both began to flow the day they were taken sick this time. He had prescribed "pancrobismuth," cream-of-tartar water for the constipation, and for the last few days one-tenth-grain doses of morphine. He had told the oldest (married) sister that he did not like to give morphine, but he finally decided to do so. He had no idea that there was any question of poisoning, and thought I ought not to have been summoned.

The chief of police said the next morning that the girls were peculiar, and were undoubtedly a little unsound mentally. When he heard of the case he said that he had made up his mind at once that they had committed suicide. There was an eccentric strain in most of the family. One unmarried brother was especially peculiar. The chief did not think he was capable of poisoning his sisters. He had no suspicion of any criminal poisoning.

The undertaker was anxious to embalm the body, and I finally gave him permission to do so. The cause of death was given as "probably accidental, due to ptomaine poisoning induced by eating diseased meat."

At 5.30 that night (October 17th) Dr. C. called at my office and told me that the other girl was dead. I went at once to the undertaker's, having decided to perform an autopsy upon this body. To my surprise I found that the girl had died at 2 P. M. and that the body had already been injected. A later interview with the undertaker developed the fact that the embalming fluid contained arsenic and other things not known to him. I decided it to be useless to make the examination under these circumstances.

The mother and father of the girls are dead. They lived with their brothers. A married sister lives in Boston. It was learned that Mary, the younger girl, was to have been married the Wednesday before death to a young man of a different religious faith. There was no property in the family and neither girl had any life insurance.

In considering this case, which I realize is not complete, and which I have reported more as a curiosity and to bring up the subject of food poisoning than to throw any light on an obscure medical subject, several things strike us as being possible: ptomaine poisoning, trichinosis, arsenical poisoning, and morphine poisoning. The failure to perform an autopsy in the first case was due to the statements of the family physician and of the chief of police, and to the fact that the girl had been seriously sick a few years before with an obscure disease, which seemed to show that she might be the subject of some chronic disease which an acute gastritis might cause to be fatal. In the second case the fault lies with the undertaker, who injected the body before I had been notified.

The facts against arsenical poisoning are the lack of pain and diarrhea, and the long time that elapsed before death. The brother upon whom the most suspicion rested is a person of dull mental power, and it did not seem to any one who knew him that he was capable of such a case of criminal poisoning.

There were no muscular symptoms that would suggest trichinosis.

I was unable to ascertain how much morphine had been taken. This drug undoubtedly influenced the late course of the disease, as the vomiting ceased a day or two before death. The girls were sick four days before they had any morphine at all. The elder girl was conscious of my visit and did not seem to have any of the symptoms of morphine poisoning.

Ptomaine poisoning seems to me the most probable cause of death, and I so stated.

It is not a well-known fact that in the growth of many, if not all, species of bacteria there are developed certain substances called ptomaines, some of which are harmless to the human organism, while others are highly poisonous. These substances may be an excretion of the germ itself, or they may be due to some metamorphosis produced by the germ in the albuminous substance in which it is growing. Be that as it may, the result is the formation of the various forms of toxalbumins known as ptomaine. These are the agents at work in most of the mysterious cases of poisoning by food that are reported from time to time, although we must exclude cases of the disease trichinosis, which has symptoms peculiar to itself but which might lead to confusion.

A scientific classification of these bodies is perhaps impossible with our present imperfect knowledge. According to their physiological action we have the coniine group, the morphine group, the colchicine group, the digitalin group, etc.; or we have a group containing oxygen, produced by known species of bacteria; another produced by unknown species.

Perhaps one of the best known of all the ptomaines is tyrotoxicon, which was first isolated by Professor Vaughan, of Ann Arbor, Michigan. This has been found, in certain conditions, in ice-cream, cheese and milk, and is the cause of many cases of poisoning

from eating those foods. It causes retching, vomiting, purging, dilated pupils, rapid breathing, weak pulse and depressed temperature. It is not known by what bacteria it is developed, and its exact chemical composition has not been determined, although it can be obtained in small quantity in crystalline forms by exhaustion with either of the preparations, previously made alkaline, and the spontaneous evaporation of the ether. It is exceedingly poisonous.

Neuridin, cadaverine, and putrescine are well-known substances commonly found in decaying animal tissue, the first being non-poisonous the last two moderately so. Cadaverine is identical with the so-called animal coniine and coniine-like ptomaine. Its chemical name is pentamethylenediamine and it can be prepared synthetically. It is closely related to putrescine, which is tetramethylenediamine.

Neurin, choline, and muscarine constitute another group of ptomaines that have been obtained from putrid meat, mushrooms, etc. They are all very toxic and are closely related chemically.

Other poisonous principles have been isolated from cultures of the typhoid and tetanus germs. Allied to these ptomaines are the various snake venoms and certain vegetable toxalbumins, such as abrin and resin, the latter from the castor-oil bean.

The chief interest of these poisons to the medical examiner is the fact that such poisons exist in food under certain conditions, and that they give rise to symptoms resembling those caused by some of the well-known mineral poisons. Therefore it is impossible to say merely from the symptoms that we have to do with such and such a poison, but the autopsy and the chemical examination alone can give us the proof that we desire. Thus, in the case I have given the failure to make an autopsy leaves us uncertain and makes the case incomplete; and the point I wish to bring out (a point that has been emphasized before this Society) is the desirability of performing an autopsy in all cases of suspected poisoning, however slight may be our suspicion.

A REPORT OF MEDICO-LEGAL AUTOPSIES.[1]

BY FREDERICK H. BAKER, M.D.,
Medical Examiner, Worcester.

These autopsies are reported to the Society not with the idea that they are unique or rare, but rather as excellent types of cases that medical examiners are called upon to investigate.

Case I. *Acute alcohol poisoning.* — Male, twenty-five years of age, laborer, accustomed to moderate drinking, while apparently in perfect health drove with a friend about four miles to a neighboring town, entered a saloon where he made a wager that he could drink a pint of whiskey within ten minutes. About one and one-half pints of presumably cheap whiskey was brought to him in six glasses. He drank the amount in less than five minutes and soon after started for home. On the way he became unconscious, vomited, and was in a comatose condition upon his arrival. He had four or five convulsions, his face was livid, he breathed heavily, and died in six hours without regaining consciousness.

His parents and brothers claimed that he was the victim of "knock-out drops," and demanded an investigation. The case occurred out of my district, but I was called in by Dr. L. White, associate medical examiner, of Uxbridge, to perform the autopsy.

Autopsy. — Thirty-six hours after death. The body showed no evidence of decomposition. It has been observed that decomposition sets in slowly in cases of alcohol poisoning. He was exceedingly muscular, of medium height, and weighed about one hundred and sixty-five pounds. Rigor mortis, with very extensive post-mortem mottling and discoloration, was present. The pupils were dilated five millimetres and equal. There were no marks of violence upon the body. There was much engorgement of the sinuses and of the pia, the puncta cruenta were very prominent and the whole brain was edematous. There were about 50 cubic centimetres of a slightly reddish serum in each pleural cavity.

Both lungs were distended, markedly engorged, and exceedingly edematous, with their lower portions dotted with numerous pleural ecchymoses, such as are seen in death from suffocation. The trachea, larynx and bronchi were injected. The pericardium contained about 100 cubic centimetres of yellow serous fluid. There was nothing remarkable about the heart or the appearance of the blood. The esophagus was of normal appearance.

The stomach contained 237 grammes of brownish-black, faintly acid, liquid contents, which had a slightly alcoholic odor. In it were partially digested bits of baked beans, potatoes, and particles of fat, etc. The wall of the stomach was slightly swollen, with the mucosa only moderately reddened, with small, dark hemorrhagic areas here and there. The upper part of the small intestines was slightly reddened but not remarkably so. The liver, kidneys and spleen were engorged, but otherwise of normal appearance. The bladder contained a considerable amount of urine, which contained a small amount of blood.

Cultures on blood serum taken from the heart's blood, liver, spleen and kidneys remained sterile, as would be expected. The stomach with its contents, the liver, spleen and kidneys, and a portion of the brain, sealed and in separate jars, were taken to Prof. L. P. Kinnicutt, of the Worcester Polytechnic Institute, for examination. He reported that "the stomach was found to contain 14½ cubic centimetres of absolute alcohol, and in the portion of liver examined an amount that would give for the whole liver 3⅓ cubic centimetres. No other poisons were found in the stomach contents or organs. Microscopical sections of all the organs were made and each one found normal in appearance."

This is a case where to my mind, after hearing the circumstances, the diagnosis was clearly alcohol poisoning, yet so strong was the feeling of the family and the town authorities that an autopsy was deemed right and proper.

Case II. *Suicide; prussic acid poisoning.* — Female, twenty-one years of age, attendant at Worcester Insane Hospital, was accused by the hospital authorities of having stolen clothing from the institution. She was given over night to make a confession of what she had stolen, and where she had disposed of it. In the morning she made a partial confession, and it was decided to search her trunk. While this was being done in her presence, she suddenly poured the contents of a small bottle into a small tin box and

[1] Read before the Massachusetts Medico-Legal Society, June 13, 1899.

drank it all. She made one exclamation and almost instantly fell to the floor, and became unconscious at once. She had very severe tetanic convulsions, her face became dusky, and she died in about twelve minutes, notwithstanding medical attendance was immediately at hand and her stomach was washed out. From certain peculiarities attending the case, the district attorney decided that an autopsy should be performed.

Autopsy. — One hour after death. She was well developed and nourished. Face slightly cyanosed, moderate post-mortem discoloration. The lips, tongue, and mouth were slightly eroded and a very faint odor of prussic acid could be obtained. The pupils were widely dilated. The mouth and nostrils were frothy. When the cranial, thoracic and abdominal cavities were opened, a distinct odor of prussic acid was noticeable.

The mucous membrane of the stomach and the upper part of the small intestines were bright red in color, swollen, intensely injected; the lower part of the small intestines was not remarkable. There was a moderate engorgement of the brain, liver, kidneys and spleen. The lungs were much engorged and edematous and there were numerous subpleural ecchymoses. The heart was not remarkable. The blood was everywhere very fluid and a striking characteristic of it was its cherry-red color and marked odor of prussic acid; a few cubic centimetres of it in a stoppered bottle retained this color perfectly for several months.

The stomach contents were examined by Professor Kinnicutt and prussic acid was found. The blood gave the reactions also for prussic acid. The spectroscopic examination gave only the absorption bands of oxyhemoglobin.

CASE III. *Acute hemorrhagic pancreatitis.* — Male, laborer, twenty-nine years of age, drove into Worcester from a neighboring town with a friend and both drank heavily during the afternoon. When returning in the evening the deceased fell out of the wagon and was left behind by the roadside. An acquaintance found him and picked him up. He supposed that he was "dead drunk," and when he reached his home, left him in the wagon in a shed, as it was warm weather. He found him dead in the morning.

The autopsy showed him to be a well-built man. There were a few abrasions on the forehead and both cheeks and nose, presumably caused by his fall. No marks upon the rest of the body. The interesting condition was found in the pancreas. Upon opening the lesser omental cavity, there appeared an extensive blood clot occupying the site of the pancreas. It wholly covered and infiltrated it, and here and there were seen areas of fat necrosis. There was clotted blood in the pancreatic duct. No ruptured vessel could be found, nor was there any rupture of any muscle or other organs. All the organs of the body were normal, though slightly engorged. The stomach showed a considerable degree of injection, as did the small intestines. There was a moderate degree of atheroma of the large blood-vessels.

Whether this pancreatic hemorrhage was due to alcohol or trauma, or both, I am undecided. Possibly neither. It is an interesting pathological condition as a factor in sudden deaths.

CASE IV. *Peculiar death from a blow upon the head.* — Male, fourteen years of age, was struck on the back of the head near the occipital protuberance by the wheel of a boy's express cart, thrown at him in anger by an older boy. He received a horizontal scalp wound about one inch in length, but was not rendered unconscious. He was out of doors during the greater part of the next three days, but did not feel well. He vomited several times and the evening of the fourth day became suddenly ill and delirious, dying the following morning.

The autopsy showed an infected scalp wound, a considerable diffused hemorrhage over the surfaces of the lobes of the cerebellum, with infiltration into it, and an acute purulent meningitis. There was no fracture of the skull. The meningitis was caused by the streptococcus pyogenes and staphylococcus aureus.

This case shows how symptoms may be delayed in a fatal head injury. His assailant was indicted for manslaughter, but he was put on probation by the court.

CASE V. *Death from an unknown cause.* — Male, thirty-five years of age, farm laborer, came into Worcester and had a few drinks of beer. A few hours later he was found dead on the floor in a bath-room in a house of questionable reputation. They stated that as he was passing along the street he was taken with severe abdominal pain, vomiting and diarrhea; he was taken in and died a few moments later. He certainly vomited all over the bath-room.

The autopsy was made two hours later. He was of unusual muscular development. Aside from a slight hyperemia of the lining membrane of the stomach and small intestines and the abdominal viscera, everything was normal in appearance. All the organs and stomach contents were subjected to a chemical examination by Professor Kinnicutt. Everything that could be thought of was searched for, but with the exception of a slight trace of alcohol, nothing was found. The only possible reason for death that could be given was that in some way the Brazil nuts which he had been eating were the cause. Particles of these nuts were found partially digested in the stomach, but chemical examination threw no light upon it. Careful cultures and microscopical sections were made from every organ, and from the nervous system, but the results were negative. The autopsy was done in a well-equipped hospital morgue; every possible pains was taken with it, as its puzzling character was realized at the time. The spinal cord was removed, the pulmonary artery examined *in situ*, the arteries of the brain examined carefully. The alimentary tract was examined from the tongue to the anus, but no lesions were found.

It is decidedly interesting for the strong negative character which it has; yet interesting and instructive as it may be, it is of such a kind that one is better than many as far as our medico-legal pride is concerned. This case certainly had the appearance and history of that of a strong irritant poison.

AN ANALYSIS OF THE CASES OF ECLAMPSIA OCCURRING AT THE BOSTON LYING-IN HOSPITAL DURING THE LAST FIFTEEN YEARS.[1]

BY F. S. NEWELL, M.D., BOSTON.

DURING the period since 1885 there have been admitted to the Boston Lying-in Hospital 90 cases of so-called eclampsia. I say so-called advisedly, because in 11 of the cases no convulsions occurred, and as the

[1] Read by invitation at a meeting of the Obstetrical Society of Boston, May 17, 1899.

synonym for eclampsia is "puerperal convulsions," it is evident that, although the picture is in other respects typical, they must be placed in another class, and I shall consider them later as cases of threatened or aborted eclampsia.

In all, then, we have 79 cases of true eclampsia treated in the hospital during a period in which 6,700 deliveries took place, an average of 11.7 to the thousand. These figures do not show the true relative frequency of the disease, as is shown by the statistics reported by Knapp from the Prague clinic, which give 22 cases in 4,480 deliveries, or 4.9 to the thousand. This is to be explained by the fact that many cases are received in the hospital for treatment after treatment outside has proved of no avail, and also that the majority of cases seen in the Out-patient Department are referred to the hospital for treatment.

Of the 79 cases 57 or 72.2 per cent. were primiparæ, and 22 or 27.8 per cent. multiparæ. This corresponds very closely with other observations, Knapp's figures being 72.7 per cent. primiparæ, and 27.3 per cent. multiparæ, while Schreiber's statistics, taken from the Vienna clinic, show 79.5 per cent. primiparæ and 20.5 per cent. multiparæ.

Cases of eclampsia are divided into three classes: ante-, inter- and post-partum. There is marked discrepancy between the statistics of different observers as to the relative frequency of the three forms. For instance, Löhlein gives the relative frequency of antepartum eclampsia as 4.7 per cent, while Olhausen, on the other hand, found it to be 40 per cent. In our series 32, or 40.5 per cent., had convulsions before the advent of labor. In 22, or 27.8 per cent., the convulsions began during labor, while in 25, or 31.7 per cent., the convulsions came on after labor was completed. This is interesting in the light of Maygrier's observation that "even in rare cases convulsive attacks may appear for the first time after delivery is completed"; whi e in our series nearly one-third of the cases had no convulsions until after delivery. This shows how misleading conclusions based on a comparatively small number of cases are apt to be.

Etiology. — The etiology of eclampsia is at present only conjectured. From time to time the discovery of a specific organism has been reported, but later investigations have failed to substantiate the discoveries.

The cases of general infection, in which organisms have been cultivated from the blood and organs must be merely coincidental, or else we must believe that eclampsia is a symptom complex and not a definite disease, and that it may be caused by several organisms, as observers generally differ as to the organism found. For example, Councilman reports a case in which there was a general pneumococcus infection, while the organism described by Gerdes was a bacillus. The modern idea is that eclampsia is the result of a toxemia, arising from some cause at present unknown, which by the inflammation it produces causes deficient excretion and a consequent accumulation of toxins in the blood. All the excretory organs are affected and not the kidneys only, as was formerly thought.

The failure of excretion is most evident in the kidneys and it is only natural that for a long time they should have been regarded as the cause of the disease, but the lesions found in them at autopsy are slighter than those found in the liver, and apparently of later date, consisting of cloudy swelling, and a more or less marked glomerulo-nephritis, while in the liver are seen numerous areas of coagulation necrosis, into which hemorrhage has taken place. These changes in the liver are considered by Schmorl, who has done the latest and most thorough work on the pathology of the disease, as pathognomonic of eclampsia.

Of our series three cases came to autopsy, and the results are in perfect accord with what Schmorl found, but they give us no clew to the cause of the disease beyond the fact that they correspond closely with the changes found in other toxemias.

Various factors have been supposed by different observers to have some share in the etiology. Lusk says that the disease is more apt to develop in (1) protracted labors; (2) multiple pregnancies, and (3) elderly primiparæ.

Thirty-two of our cases were taken with convulsions before the advent of labor. The average length of labor for the remaining 47 was 21.9 hours. The longest labor was one hundred and twenty-five hours, and there were four others over fifty hours in length, while the shortest primiparous labor was two hours and fifty minutes.

An equal number of normal primiparous and multiparous labors, taken at random from the records, gives an average length of 15.2 hours. If we omit the five cases in which labor was over fifty hours long we find that the average for the two classes is practically the same, and the conclusion is obvious, that only a small proportion of cases are affected at all by the length of labor.

The effect of multiple pregnancies in causing eclampsia seems to be much more marked. During the period covered by this paper there have been 63 twin births in the hospital, and among these six cases of eclampsia developed, or about one in ten.

In regard to the statement that elderly primiparæ are more prone to the disease than younger women, the records show that of the 57 primiparæ only six were over thirty, and that the average age was 22.5 years. Knapp and Schreiber both say that their cases were for the most part young, Schreiber reporting 109 out of 113 as under thirty.

Symptoms. — It is a general rule that attacks of eclampsia are preceded by prodromal symptoms, which in a certain number of cases give sufficient warning, so that with proper treatment the attack may be aborted. Lusk says that the majority of cases, though not all, have premonitory symptoms, while Thomason, writing more recently, says, "Rarely are convulsions unheralded. In the vast majority of cases there were prodromal symptoms." In our cases, on the other hand, the record states positively that there were no prodromal symptoms in 21 cases, and in five others no history of symptoms was obtained, so that in one-third of the 79 cases there were either no subjective symptoms or they were too slight to attract notice. It must be remembered, however, that most of these cases were not under observation until eclampsia had developed, cases not being admitted to the hospital until the advent of labor, or in case of emergency. The urine had not been examined up to the time of their admission, and they belong to a class of women who are not observant of their symptoms at any time, so that warning symptoms may have been present and passed unheeded. Of the 53 patients who gave a history of symptoms, 37 complained of frontal headache, either as the only symptom, or

combined with others; 33 had vomiting; 19 had epigastric pain; five had been noticed by their friends as being more stupid than usual; five complained of blurring of vision or blindness for some days previous to the attack, while several others complained of it just before the convulsions appeared; three patients had twitching, and one was delirious for twenty-four hours before the graver symptoms appeared; one patient had jaundice. These symptoms were complained of as having been present for from an hour or two before the attack up to three months. Twenty-three had more or less edema at the time of entrance, usually of the feet and ankles. In only 10 cases was edema of the face and hands noticed at entrance, though in six cases it developed after delivery. Edema of the lungs was present in one case at entrance.

Examination of the urine showed albumin in all except two of our cases, varying in amount from a very slight trace up to two per cent. or even more. Blood and casts were found in almost all the cases, but were occasionally absent. In two of the 79 cases there was no albumin in the urine and the sediment was normal. The urea was quantitated in so few cases that the results are of no value, but in those few cases it was diminished. Examination of the urine at the time of discharge gave these results: In 14 cases there was no albumin in the urine at discharge. In 20 cases no record of the condition at discharge was made. The other cases showed albumin varying from a slight trace up to one-eighth per cent., with nothing abnormal in the sediment. One case showed one-half per cent. albumin, with blood and casts in the sediment, and was referred to the Massachusetts General Hospital for treatment. The blood and casts disappeared in the majority of cases by the fifth day. In only one case did they persist as long as the fourteenth day.

Convulsive attacks, usually epileptiform in character, are the chief diagnostic signs of the disease. The patient may never recover from the first convulsion, or she may recover after many severe attacks. The 58 cases in our series who recovered averaged six convulsions each; 12 had only one convulsion; one patient recovered after twenty-five convulsions.

The 21 fatal cases averaged 11.9 convulsions each, one patient having forty-six attacks. Twenty-one of the 79 cases died, a mortality of 26.5 per cent. This compares very favorably with the statistics of other maternity hospitals, which vary all the way from Schreiber's mortality of 20 per cent. in 137 cases to those of Pajot, which give 50 per cent. mortality.

Of 32 ante-partum cases 10 died, a mortality of 31.2 per cent.; of 22 inter-partum cases six, or 27.2 per cent; and of 25 post-partum cases five, or 20 per cent., died. This shows that the prognosis of post-partum eclampsia is rather more favorable than in the other two forms.

Of the 57 primiparæ 12 died, or 21 per cent., which is about the same as Schreiber found in his series, as 19.8 per cent. of his primiparæ died. On the other hand, his mortality among multiparæ was 22 per cent. as against 41 per cent. in our series. Of the patients who had no premonitory symptoms three died, two of them having had only two convulsions each, or less than the average for those who recovered.

The prognosis in a given case must always be a serious one. We have no standard to guide us in the individual case. If marked prodromal symptoms are present the prognosis is somewhat worse than if they are absent.

The number of convulsions is not a sure guide to the gravity of the case, as in our series patients died after one convulsion, and recovered after twenty-five; but in the main it may be said that the more convulsions the patient has the worse the prognosis. The urine gives us no information as to the probable outcome of the case, as there seem to be no differences in its characteristics whether the patients die or recover. Possibly a systematic examination for urea might show something, but the quantitative test for urea was not made a sufficient number of times in these cases to form any conclusion as to its value. The prognosis is also better in those cases which have been under observation and treatment from the first than in those in whom treatment is begun later, and also is slightly better in primiparæ.

Of the cases in this series one had had eclampsia with her first child, and survived both attacks, while a second had a recurrence during a subsequent labor and died. In one case the convulsions ceased on the second day, under treatment, and the patient seemed out of danger on the fourth day, but the convulsions recurred on the fifth day, and she died on the seventh day. Another patient relapsed on the fourth day after having been without symptoms for twenty-four hours, but made a good recovery. These two cases show how guarded a prognosis must be given in any case even though the patient seems to be doing well.

Treatment. — The treatment has been along the same general lines in all cases, with minor differences according to the different services in which the cases occurred. In the main, the treatment has been to empty the uterus as rapidly as the conditions of the cervix, etc., permit, and the encouragement of all excretions, the object being to secure as rapid an elimination of the toxins as possible.

I have one general criticism to make in regard to the treatment, and that is, that the disease seems to have been treated in many cases at the expense of the patient, and that stimulation has been too often neglected, in spite of the fact that the general treatment is markedly depressant in its effect. After making a careful study of the records it seems evident to me that shock after operative delivery has played a considerable part in the death-rate, and I should urge most strongly the application of the same principles after operative delivery that we employ after a severe surgical operation. It seems to me that it is along this line that we can do the most to reduce the mortality, especially if we employ prophylactic measures instead of waiting for the symptoms of shock to develop.

There are a few special points about the results of treatment that deserve mention:

Pilocarpine was used in the treatment of 56 cases, five of whom died of pulmonary edema, which illustrates the danger of giving that drug to unconscious patients.

Morphia was used in two cases to control the convulsions. One-fourth-grain doses were given in both cases, and repeated once after a two-hour interval. Both patients developed alarming symptoms after the second dose, the respirations dropped below 10 and cyanosis appeared. The treatment was promptly suspended and both recovered. Veit, who is the chief advocate of this method of treatment, recommends

one-half-grain doses after each convulsion until the convulsions cease. It may be that both of these cases had a special idiosyncrasy for opium, but after seeing these cases I should hesitate about the use of morphia in any but the smallest doses, and should be very careful about repeating it. It seems to me that the physiological action of morphia is practically the opposite of what we are trying to effect by our other treatment, and in this disease of lessened excretions the danger of cumulative action in case of repeated doses becomes much increased.

Saline infusion was tried in eight cases, four of which died. Two were *in extremis* at the time of infusion and were only given one pint each, so that the treatment was not given a fair trial. Of the six cases in which the treatment was thoroughly carried out four seemed hopeless, and the infusion was tried as a last resort; two of the patients made good recoveries. A third reacted well to the treatment and seemed to be convalescing, but relapsed on the fifth day and died on the seventh day. The fourth case did not react at all. In the two other cases the infusion was given as part of the routine treatment, and both made good recoveries. The fact that out of four seemingly hopeless cases two recovered would seem to indicate that this treatment is worthy of careful trial, but the data in regard to it are too slight to show anything definite. Saline infusion acts in three different ways in these cases: First, as a cardiac stimulant it lessens the liability to shock very markedly; in the second place, it acts as a stimulant to the various secretions and aids materially in the excretion of toxins, as is shown by the fact that the excretion of urine comes up much more rapidly in the cases which have been infused than in those which have not; and, thirdly, it serves to dilute the toxins in the blood, and in this way lessens the irritation caused by them during excretion. For these reasons it seems to me the most rational treatment to adopt in all cases as a routine measure, and in suitable cases it may be combined with venesection with great advantage.

In 26 out of 64 ante- and inter-partum cases the convulsions ceased as soon as the uterus was emptied, which points to the value of immediate delivery as a therapeutic measure. Two cases were treated expectantly and recovered without resort to operative delivery; one of these miscarried a month after leaving the hospital, and one went to full term and was delivered of a living child. Neither case showed any signs of eclampsia during or after labor. While in 26 cases delivery ended the trouble, on the other hand the convulsions began after labor in 25 cases. The mortality among the latter class of cases was distinctly less than in the other two classes, so that it may be fairly claimed that emptying of the uterus is of marked benefit to a large proportion of cases, especially when adequate measures are adopted to guard against shock.

Operative delivery was resorted to in 49 out of 56 ante- and inter-partum cases, with 16 deaths. Four died of edema of the lungs, so that only in 12 can the operation be said to have played any part, and I feel that shock was the most important element in these. Twenty-five children were stillborn or died a few hours after birth. Twenty-seven versions were done and 10 children saved. Of the others nine were less than seven months, and were either stillborn or died in a few minutes; four were between seven and eight months; two craniotomies were done, the children being already dead; only two children were lost who were not premature or dead at the time of operation; 20 children were delivered with forceps, four of whom were still-born; four children were born dead after normal labors, one being macerated, the mother having had severe symptoms for two weeks before convulsions developed, labor coming on with the attack; three women miscarried before the fifth month.

In the 25 post-partum cases three children were lost. One of these was between six and seven months, the mother having had severe symptoms for ten days. One was stillborn, with forceps, after a hard labor, and one died of convulsions on the second day. One child developed convulsions on the second day, and had over twenty in the next forty-eight hours, but recovered.

Of the cases of threatened eclampsia little need be said. Barring the convulsions they presented no differences from the others. They had the same symptoms, and the urine showed the same changes, but under appropriate treatment they recovered without having convulsions. In five of the 11 the symptoms first appeared during labor, but were relieved by prompt emptying of the uterus.

Clinical Department.

A CASE OF UTERINE FIBROID.[1]

BY GEORGE H. WASHBURN, M.D., BOSTON.

Miss X., age twenty-six; sent by Dr. Faunce. Seen first on March 15, 1899, when she gave the following history: Menstruation began at twelve years. Was regular till 1890; after that somewhat irregular but nothing special till the spring of 1897, when the menstruation was more frequent, sometimes coming every two or three weeks. The quantity each time, however, was not excessive until December, 1897, when she had a hemorrhage lasting ten days and passed many large clots. She was then curetted by some physician and then had no flow whatever till July, 1898. This first catamenia was normal but afterwards the intervals were irregular and there was flowing and considerable pain. In January, 1899, flowed for three weeks, large clots and severe pain. Then followed a period of eight days without any flow. Then there was a return of the profuse flowing, lasting until a week ago. Bowels regular, appetite poor, digestion fair, some gas, micturition about normal.

The patient when first seen by me was very pale, the skin a pasty white and the lips almost colorless. There was some complaint of a fulness in the bowels. She was easily tired on exertion. The body was plump, and she had the appearance of one who had been exsanguinated by some accident. The flow had been absent only a few days, but she was apprehensive of its return. Vaginal examination revealed an open os, with a large mass pressing down as if to force itself through; the surface smooth and evenly rounded. With the other hand on the abdomen the tumor was felt as an evenly rounded mass, not very hard, rising almost to the umbilicus. The feeling was almost that of a pregnant uterus at five months.

[1] Read before the Obstetrical Society of Boston, April 19, 1899.

The patient was sent to St. Elizabeth's Hospital, where she was put to bed in a quiet room. Extra feeding, in the shape of raw eggs, was started. Hydrochlorate of hydrastrin was given every four hours in one-eighth-grain doses.

On March 18th I examined her under ether, to see how much the mass filled up the uterus. It filled the whole space with the exception of a small canal, too small to allow passage of finger, running up behind the mass farther than the finger could reach. No sound was passed, as it was not desirable to start any bleeding. The tumor itself felt rather soft, almost giving a sense of fluctuation.

Flowing began two days later, and she was then put on doses of gallic acid as well as the hydrastin. The flow was at no time profuse and lasted about a week. She was then put on quite large doses of Gude's Pepto-Mangan, was allowed to get up every day and sent out for a drive. Her color and general condition improved quite rapidly, and she was in such an improved condition by the end of the first week in April that on the 8th the operation was performed.

There were present Dr. Faunce, who had very kindly sent the patient to me; Dr. Burrage, who assisted me during a part of the operation, and Dr. Kingman part of the time; Dr. Hinckley, senior house physician, assisted me through most of the operation. The vagina was thoroughly scrubbed with soap and hot water, then with corrosive solution. The external genitalia had previously been shaved and an antiseptic poultice put on abdomen. The uterine cavity was next washed out with a corrosive solution. The abdomen was now uncovered and washed with soap and water, ether, alcohol and corrosive solution.

Incision was made in the median line. On opening the abdomen the rounded mass was immediately in view, with the fundus of the uterus perched on top of it (like a small hat on a large head), the tubes and ovaries extending from either horn. The left ovary was considerably enlarged and cystic.

On account of the youth of the patient it had been decided to try to preserve the uterus. The inside attachment of the tumor was so extensive that I did not wish to risk removal by morcellation, and it was determined to deliver the tumor through the abdominal incision. A cut was made in the anterior wall of the uterus, extending from the fundus to the fold of peritoneum, just as it goes over the bladder. When the capsule of the tumor was reached, it was peeled off from the uterus by the finger as far as it could reach. The uterine opening being too small to deliver the tumor, two lateral incisions were made at right angles to the first cut. The tumor was now seized with vulsellum forceps and drawn up strongly, so that the remaining portion could be peeled off, and a mass about as large as two fists removed. There was hardly any bleeding up to this time. Now, however, there was much oozing from the extensive raw surface. A strip of sterile gauze was passed down into the vagina, one end remaining in the uterus. With No. 2 chromicized St. J. Leaven's catgut, the slack of the uterus, or the oozing blind spaces, was taken up. A new cavity was made for the uterus, preserving the space covered with mucous membrane. The left horn was apparently obliterated, but the right was pervious into the tube. The uterine muscle was brought together by deep sutures. A superficial layer of continuous suture united the seroserous surfaces. No. 2 St. J. Leaven's chromicized catgut was used in all uterine sutures. The left tube and ovary were now tied off and removed, the ligatures being placed at either end of the broad ligament, the two peritoneal surfaces between being sewed with a continuous silk suture. The abdominal wall was closed in four layers; the peritoneum, muscle and fascia being united with Leaven's chromicized catgut, and the skin and fat by interrupted wormgut suture. Hypodermic of aseptic ergot (P. D. & Co.), one-half drachm, given.

The patient was put back to bed in good condition; head elevated. The gauze was removed from the uterus in forty-eight hours, and an intra-uterine douche of one-per-cent. creolin solution given. There was very little vaginal discharge. A daily intra-uterine douche was given for a week. The temperature has at no time been over 100.5°. There has been very little pain after the first night. Abdominal wormgut stitches removed April 17th; perfect union.

Patient is now eating well, improving in color, and said to-day she felt like sitting up.

I have reported this case so fully, because this operation has not been done many times here, I think, and I believe it is deserving of consideration. In a young woman it does not seem right to mutilate by doing a hysterectomy, and trying to remove so large a tumor by morcellation through a virgin vagina seems to me a more dangerous operation than this, if feasible at all. There are also certain definite advantages in the way of having the field of operation open to inspection; hemorrhage is more easily controlled where it exists. The appendages may be inspected and treated if necessary.

To sum up, the operation is not very difficult; hemorrhage can be more readily controlled; the conditions in the pelvis are open to inspection, and, above all, mutilation of the patient is avoided, and what may be a useful organ is saved.

A CASE OF OVARIAN CYST WITH TWISTED AND STRANGULATED PEDICLE.[1]

BY W. L. BURRAGE, M.D., BOSTON.

ANN C., age sixty years, widow, the mother of twelve children, entered the Carney Hospital, August 2, 1897. She was an Irishwoman, of large frame, and had always enjoyed rugged health. Her labors had been normal, and she had had the menopause fifteen years before. About a year ago she noticed that her abdomen was larger than formerly, but it gave her no special discomfort. Three weeks before entrance, early one morning while getting ready for mass, she felt a sudden sharp pain in the lower abdomen. The pain was very severe, and, as she expressed it, it seemed to her as if her insides were being torn out. It continued throughout the day, and she had had a dull pain across the abdomen, with exacerbations of sharp pains, ever since; for two weeks had had vomiting and loss of appetite and complete stoppage of the bowels.

On entrance to the hospital the patient had a temperature of 100° and a feeble pulse of 80. She was emaciated, especially about the arms and chest, and she had conjunctivitis and a poor color. The abdomen was universally distended, bulging in the flanks;

[1] Read before the Obstetrical Society of Boston, December 21, 1898.

tympanitic everywhere above the level of the umbilicus and flat below that level. In the lower half of the abdomen, reaching to the umbilicus, could be felt a hard, immovable tumor of smooth contour, that was not in any respect tender to manipulation. By vaginal examination could be made out a senile uterus, retroverted and on the pelvic floor underneath the tumor.

An attempt was made to move the bowels by enemata without much success. Vomiting of a fecal character was almost constant and was excited by swallowing. In the next three days the temperature fell to 98.9° and the pulse became more rapid, 118. In spite of rectal alimentation and stimulation the patient's strength failed.

Operation, August 5th, under ether. The cyst wall, thickened and necrotic, was found closely adherent to the parietal peritoneum. When the cyst was punctured it gave exit to about a quart of dark blood and flakes of lymph, having a slight musty odor. The cyst filled the pelvis and was intimately adherent to the pelvic wall, bladder, omentum and intestines. It was shelled off with moderate ease and there was little oozing. The cyst wall, yellowish gray in color on the outside and deep red on the inside, was four millimetres thick and its interior was trabeculated. The pedicle, three centimetres broad, and from right broad ligament, was twisted on itself tightly, one and one-half times from left to right, like a corkscrew with its handle in the pelvis and its point at the position of the cyst. There was no circulation in the pedicle, which was white and friable. The pedicle was ligated and the tumor removed. When the loops of the intestines, which were much injected and pretty generally adherent, were freed from one another, a distinct noise of pent-up gas and fluid could be heard passing along. The peritoneal cavity was irrigated with salt solution, a pint being left inside, and the wound was closed without drainage. The postural method of draining the peritoneal cavity was employed for twenty-four hours after the operation.

The patient reacted well; the nausea ceased at once and did not return, and the bowels moved three times on the third day after calomel. The temperature was not above 99° and the pulse about 104. The remaining convalescence was uneventful.

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

J. A. MEAD, M.D., SECRETARY.

The Society met, with a full attendance of members, June 13, 1899.

The business of the annual meeting having been transacted, including the re-election of the board of officers who had served the previous year, Dr. F. W. Draper read a paper entitled

CRIMINAL ABORTION, WITH A DYING DECLARATION.[1]

Dr. Hough: Although dying declarations are considered with sanctity by not only people in general but the medical fraternity as well, the statements made by persons with full knowledge that they are about to die are not necessarily true. I have had, as medical examiner, one experience of that kind. A man who had been stabbed, having been informed by the Catholic priest in "extreme unction," as well as by myself, and I think two other physicians, that he would die, stated who had inflicted the wounds upon him, and also stated that the attack was entirely unprovoked. Yet it was unquestionably proven in the police court that the homicide had been done in self-defence; that the dead man had assaulted the other fellow with a heavy iron bar or some such weapon, had knocked him down, and that the victim of this assault had stabbed the man who had assaulted him, and that the stabber was about five feet six inches, and the man whom he killed was over six feet. There was no question but that this man said what was not true in the dying declaration.

Dr. Mead: I was much interested in Dr. Draper's case, because conviction came so quickly. My experience has been that, even with dying declarations and confessions, somehow or other the jury pronounce a verdict of not guilty. I had a case where a dying declaration was taken by a physician in a Newton hospital. The man who had performed the operation was brought to the hospital, confronted by the woman and identified, and after that experience and confession the jury acquitted this man, who undoubtedly did the operation. I think that we more often have this experience than that of Dr. Draper in his case.

Dr. Canedy: I have nothing to say in the matter of dying declarations, as I have had no experience in that matter. But the difficulty of prosecuting abortionists is as apparent to medical examiners in the northwestern part of the State as in Boston and vicinity. Near the town in which I live has been a noted abortionist, who has carried on her notorious trade for many years, and it has been known by many citizens that she has carried on this business, and she must have got a great deal of money in that way. The district attorney heard of her, and declared that she should be brought to justice; but it was impossible when the time for the case came to get her to court. She said that she was sick and had to stay at home in bed, and some physicians, members of the medical society, gave certificates of illness, saying that she was not able to attend court. She succeeded in playing this game for a considerable time. In the meantime, a petition was circulated and signed by one-half of the reputable business men of the village in her favor, asking that she be dealt with leniently. This was enough to discourage any district attorney, and it is generally the way that public opinion runs in all such cases. The authorities, however, finally succeeded in getting this woman into court, and compromised by giving her about a year in jail.

Dr. Adams: I think that the last gentleman's remarks have struck the real key to the difficulty. A law is not good for much that is not backed up by public opinion and public sympathy, and however people may talk, I fear that that is what the execution of this law lacks — backing of public sympathy.

Dr. Presbrey: I have known a medical examiner to return a case of criminal abortion, and wait in vain for it to appear in court for trial. There is another instance: when we speak of dying declarations I think that we ought to remember that it is not accepted in the court as truth; it is viewed as other evi-

[1] See page 461 of the Journal.

dence, and out of all the discrepancies the truth may prevail. It is the function of the court to separate the true from the false.

DR. H. G. BLAKE read a paper entitled

A CASE OF PTOMAINE POISONING.[2]

DR. ADAMS: It is comparatively a short time since we have heard anything of poisoning by ptomaines — I mean fatal poisoning. I cannot recall any precise definition of it which would enable me or any one else to distinguish a case of ptomaine poisoning from a case of poisoning by arsenic — I mean in the clinical history.

DR. ABBOTT: A distinction between the two might be said to be that arsenic poisoning is very often fatal, while ptomaine poisoning is very seldom fatal.

DR. CANEDY: I was very much interested in the reading of this paper, as it suggested to my mind an experience that I have had with trichinosis. There were some 12 or 15 cases in all, three of which were fatal; some recovered after quite a long illness. But these cases were quite similar to those in the paper. The sickness was short and very acute, beginning after eating, and these cases were traced to sausage, soon after ingestion of which they were taken with vomiting, with severe diarrhea; the patients were sick a few days, with elevated temperature, gastro-enteric pains, frequent and rapid pulse, and little could be done to arrest the progress of the case, which proved fatal to three patients. The remaining eight, or 10, or 12, recovered after a long illness, and some have hardly recovered yet.

My experience with ptomaines has been that while the case is severe, the patient soon recovers, and I should not expect a case of ptomaine poisoning where death followed after a week's illness.

DR. ADAMS: I will state a case in which the diagnosis was made, by the attending physician, of ptomaine poisoning. When the symptoms were related to me they seemed to indicate arsenic poisoning, and I so declared was my opinion. On making a post-mortem examination I found distinctive indications of arsenic poisoning, and I sent different parts of the body to Dr. Wood, and he sent back word that it was undoubtedly a case of arsenic poisoning. The symptoms were very much as already described in the case of Dr. Blake, and the termination was fatal. The condition, which came on at the end of about four days, was that of rapid collapse, terminating in death; it was that circumstance that induced me to say arsenic, since, if it had been a case of ptomaine poisoning, the patient would have got well instead of dying suddenly in collapse. The peculiarity was, after the preliminary symptoms of purging and vomiting, with that terrible burning in the pit of the stomach, there was a time when the patient was quite easy; he could take food without any purging or vomiting, and that continued for two or three days, when there came on again violent vomiting, retching, burning pain at the pit of the stomach, and the man died suddenly in collapse. I think that in the history of arsenic poisoning that is not a very unusual course; that the cases generally terminate within forty-eight hours; that there is a time when the symptoms seem to cease.

I remember having a case of a man who drank a quantity of Paris green and who lived nearly three weeks, and a part of that time believed that he was going to recover, but he finally died in collapse. This man took all the poison at one time. The doctor insisted upon it that this man must have taken a new dose of arsenic, which must have brought on recrudescence and must have caused death. At the autopsy I found that peculiar condition of the liver — that pale yellow, fatty look — so marked that I could not have supposed it to have happened within twenty-four hours, but must have been a thing of slow development. There were crystals of arsenic in the stomach and intestines and a very large quantity in the urine; I was able to draw from the bladder only a few drops, and found one-sixtieth of a grain of arsenic in that small quantity of urine, which was considered a large quantity of arsenic. I sent the liver, stomach, intestines and brain, and arsenic was found in all these organs. It seems to me that the urine is the most important material; next to that, perhaps, the liver. The poison is entirely eliminated from the stomach and a good portion of the intestines by violent vomiting, if, since the ingestion of the poison, a considerable time has elapsed, perhaps three or four days. The only interesting point of this is that it was called a case of ptomaine poisoning and the only diagnosis which could be made before death; there was hardly a possible diagnosis from the clinical symptoms until death occurred in collapse, which would not have appeared if it had been ptomaine poisoning.

DR. ABBOTT: I have had opportunity to see four or five cases of trichinosis. All of these except the last three were in the families of foreigners, either Swedes, Germans, Hungarians, or French Canadians; but what I want to bring to your attention is that there is one quite distinctive symptom, and that is extreme muscular tenderness; I never saw a case in which that was not pretty well marked. I have seen a young college student all drawn up in bed, very sharp pains in his legs, his tongue so stiffened that he could not speak, and it hurt him to open his eyes and he could not open his mouth. These muscular tendernesses are due to infiltration of the muscles with this parasite. Three members of his family were taken ill, in the case of the college student; his two little brothers also ate of the ham which caused his illness, but were not so sick, as they did not eat in similar quantities.

DR. ADAMS: In confirmation of what Dr. Abbott has said, it has recalled to my mind three cases of trichinosis, which occurred in Saxonville thirty years ago. They were all marked with intense muscular tenderness and pain; muscular movements were very painful and it was almost impossible to move the arms or legs.

DR. F. H. BAKER read a paper entitled

A REPORT OF MEDICO-LEGAL AUTOPSIES.[3]

DR. PRESBREY: I should like to mention a case suggested by one of those reported by the reader. The mother of a little child was cleaning silver with solution of cyanide of potassium; the mother's back was turned, and the little one took up and swallowed some of the poison. As the mother knew the danger, and it is only a short distance to my house, she sent for me. Knowing the seriousness of the trouble I went immediately. There was an interval of ten minutes from the time that the child took the poison

[2] See page 463 of the Journal.

[3] See page 465 of the Journal.

until I got there, and then the child was cyanotic and died within a very few minutes.

DR. PAINE: The 1st of January, 1898, I was called to a young fellow who had been found lying by the roadside. He was taken up and brought to the police station; when I got there he was dead. They picked him up alive and he lived a few moments and had great trouble with breathing. At the autopsy the face was gray, there was no odor from the mouth at all of prussic acid and the appearance was negative. But I took the stomach and liver and other organs to Professor Wood; the next day they began to show cherry color, and Dr. Wood said that he was positive there was some poison there. The dead man had had some trouble that had been weighing upon him a good deal and he had told a doctor that he was going to commit suicide. He had said, "I know that I can take prussic acid and no one will know that I am going to die, or what has been the cause." Where he was lying in the road they found large quantities of cyanide of potassium.

DR. HOUGH: I will relate a case of poisoning by cyanide of potassium — that of a bank cashier, who had been using the bank's money, and found that he would be discovered. From the bank he telephoned the family physician, saying, "Doctor, I wish that you would go up to my house and tell my wife that I am dead," or words to that effect. The doctor said, "Why, what do you mean?" "That I am going to kill myself." The doctor said, "Do not do it; where are you?" He replied that he was at the bank. The doctor ran to the bank; he got there in less than five minutes and the man was dead. In that case there was a distinctive odor about the mouth of the dead body of ammonia, as I think will frequently happen. It was not the real cyanide odor, but rather ammoniacal. If any have had experience with cyanide of potassium, they will know that the bottle in which it has been kept does not have a real cyanide odor, but a somewhat ammoniacal odor, similar to that produced by cyanide of ammonia; if any one is familiar with that peculiar ammonia smell — not straight ammonia — it is just as good evidence as the straight smell of cyanide of potassium.

THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

MEETINGS of April 19 and May 17, 1899.

At the meeting of April 19th, DR. G. H. WASHBURN reported

A CASE OF UTERINE FIBROID.[1]

DR. W. L. BURRAGE: When I saw the case it was a most interesting problem how the mass should be approached. At first I was in favor of morcellation; but though it projected downwards so that the os was the size of a twenty-five-cent piece, the mass was so distinctly intra-abdominal rather than pelvic, rising at least half-way to the umbilicus, that the plan of removing it through an abdominal incision seemed the more promising. Dr. Washburn is greatly to be congratulated upon his success in retaining a uterus with a fair cavity in spite of the partial loss of uterine wall. I have not happened to see another case in which the tumor invaded the structure of the uterine wall as extensively as in this one, in which the tumor could be removed by any other operation without probably sacrificing the uterus.

DR. J. G. BLAKE spoke of the method of splitting the capsule of submucous fibroids, *per vaginam*, and if necessary, in certain cases, allowing nature to assist the process of extrusion.

DR. EDWARD REYNOLDS: This case seems to me to have been one of the most difficult myomectomies I have heard of, yet it was perfectly successful. This agrees with my own feelings on the subject. I am coming to believe that the vaginal operations for fibroids are blind and unsurgical, and often involve the sacrifice of a uterus that could have been saved had the operation been from above. Myomectomies often look much more difficult in a given case than they prove to be.

DR. W. F. WHITNEY asked as to the liability of impregnation in cases in which the uterine cavity had been much distended by fibroids, as in such cases, histologically, there is much deterioration of the mucous membrane.

DR. J. R. CHADWICK: I have personally seen at least 15 cases in which pregnancy was complicated by fibroids.

DR. REYNOLDS: In the perhaps 15 cases of pregnancy complicated with fibroids that I have seen, at least three would come within the somewhat sharply defined class Dr. Whitney has asked about. In one I did a hysterectomy and found the fetus lying above the fibroid, which was about the size of a tumbler. In a recent puerperal case of mine, I found three-quarters of the posterior wall of the uterus occupied by an intramural fibroid, so that the whole uterine cavity was much distorted.

At the meeting of May 17, 1899, the President, DR. ALFRED WORCESTER, in the chair, DR. F. S. NEWELL, by invitation, reported

AN ANALYSIS OF THE CASES OF ECLAMPSIA OCCURRING AT THE LYING-IN HOSPITAL DURING THE LAST FIFTEEN YEARS.[2]

DR. E. REYNOLDS: I am somewhat struck by the very large number of cases of stillborn babies in the cases in which version was performed (17 out of 27) as compared with the four in 20 cases in which forceps were used. This apparently bad showing is very unfair to version, as in many of the cases in which the child was lost its death was due to extraneous circumstances, the delivery being premature, for instance. The large number of cases in which epigastric pain was noted is also surprisingly large, as is also the small number in which there was disturbance of vision.

There is one point in which I am rather inclined to criticize the usual teaching which is diuresis, diaphoresis and catharsis. It seems to me that there is a fourth equally important indication, which is the prompt and continuous use of sedatives to keep the convulsions down while other lines of treatment are being followed. I am confident that many cases die of obstetrical shock, and believe thoroughly in the great importance of stimulants. The importance and gravity of eclampsia can hardly be overstated. In the whole range of medicine and surgery there are few cases in which a man feels proud to have lost only 25 per cent. of his cases.

[1] See page 469 of the Journal.

[2] See page 466 of the Journal.

DR. F. A. HIGGINS: In a recent and apparently most unfavorable case of mine, treatment by saline infusion worked excellently well. I have seen one or two bad cases in which it was my firm impression that the use of strychnine had considerable to do with the increase in the number of the convulsions.

DR. G. J. ENGELMANN: I favor the supporting rather than the stimulant treatment. I have heard nothing said this evening thus far about venesection. In certain cases its use has been most satisfactory. To my mind venesection, followed by infusion, is the ideal treatment for the casting off of the toxins with which the blood is crowded, and the most efficient way of supporting the patient. Salt infusion alone is but a partial remedy.

DR. J. G. BLAKE: To repeat the views that I have expressed many times before, I would say that in my earlier years, when I saw many cases of eclampsia, my principle was to head off the convulsions by the use of ether and to empty the uterus at once, and then use calomel as a diuretic and cathartic. My success has been, I think I may say, somewhat unusual, in that I have never lost by puerperal convulsions a woman who was under my own care, though I have seen one or two in consultation that died. I have usually emptied the uterus by version done at the earliest possible moment.

DR. J. S. PHELPS: I recall, to emphasize the importance of prophylaxis, a recent case, at which I saw a woman at the seventh month with headache, etc., whose urine contained one to eight per cent. of albumin, in whom all the symptoms disappeared under ordinary treatment, and later she had a normal labor.

DR. G. H. WASHBURN: The lesson can certainly be drawn from such cases that the early recognition of the condition is the most important thing. We should train the public to recognize that neglect means great danger, and if women would only call their medical attendants earlier there would be fewer deaths.

DR. C. W. TOWNSEND: In 1893 Dr. C. M. Green published a report of 36 cases occurring at the Boston Lying-in Hospital. In December, 1896, I reported 67, and to these Dr. Newell has now added 12. I have naturally been much interested in following these statistics. It was somewhat striking that in the cases included in my report it should have appeared that the mortality of the cases occurring in private practice, chiefly among members of this Society, should have been exactly the same as that of cases occurring at the hospital. It must, of course, be said that many of the cases seen in private practice were consultation cases, and therefore on much the same basis as hospital cases, in that they were not seen by the consultant beforehand. In my paper I showed that while in both private and hospital cases there was the greatest mortality in the ante-partum cases, in private practice the post-partum cases were more fatal than the inter-partum ones, which proportion was, however, reversed in the hospital cases, which would apparently dispose of the argument as to the effect of labor.

DR. A. D. SINCLAIR: My personal experience with eclampsia has been a rather fortunate one, in that all except two of the cases that I have seen were in consultation, and I have not happened to lose a single woman. My method has consisted in prompt etherization, kept up to prevent the nervous system from waking up. Quick delivery followed a large dose of calomel and jalap.

DR. J. P. REYNOLDS: In five cases under my immediate care there was not a single convulsion after ether had been thoroughly given, though in these cases many convulsions had followed other lines of treatment. I wish to emphasize the harmlessness of continuous and thorough anesthesia. I cannot agree with those who regard the number of convulsions as of little importance; on the contrary, I attach the greatest importance to preventing another single convulsion. In certain cases I would not dare to let a woman have another convulsion. I yield to no man as regards the sanctity of the child's life, but I think that the child has the best chance of life if we act promptly. As to how long I would continue anesthesia, I can only say that in those five cases it was kept up from eight to twenty-four hours, deeply enough to keep the patient quiet, and there was not a single sympton that led me to think that the woman was any the worse for the anesthetic.

DR. C. J. MCCORMICK: I should like to ask the experience of the gentlemen of the Society as regards the return of albuminuria in successive pregnancies. I have in mind two cases, in each of which there was a return in each successive pregnancy, although somewhat elaborate efforts at prophylaxis were made.

DR. NEWELL: As these cases were all hospital cases, in which the subsequent histories are unknown, I can only say that there was such a return in two cases.

DR. H. E. MARION: I endorse the necessity of watching patients, especially primiparæ, from the beginning, and also the importance of making the skin and bowels do their work in saving the kidneys. I am especially fond of hot baths. As regards repeated albuminuria, I have seen several cases in which it was present in the first pregnancy but not in subsequent ones, and when repeated I should be strongly inclined to suspect a crippled kidney.

DR. EDWARD REYNOLDS reported orally

THREE CASES OF FIBROIDS STRANGULATED BY INVOLUTION DURING THE PUERPERIUM.

DR. M. H. RICHARDSON showed a number of

PATHOLOGICAL DRAWINGS,

one of a dilated sigmoid recently removed by him being of especial interest.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

STATED meeting, October 12, 1899, HENRY KOPLIK, M.D., in the chair.

DR. A. JACOBI read a paper on

ANTIPYRETIC DRUGS: THEIR USE AND ABUSE IN THE TREATMENT OF FEVER.

After some introductory remarks on the causes of fever, he referred to the various methods that had been attempted for the reduction of temperature. Antiseptics, he said, had not proved successful, and the class of remedies meant to paralyze the organs of circulation, such as veratrum viride, had to be given in

such large doses as to render them objectionable and dangerous. In the third place we had agents which act upon the locality of the production of the high temperature, such as quinine.

Could we kill microbes in the blood by the use of germicidal remedies? We could if we gave a sufficient quantity to kill the patient also. But in certain cavities the effect of toxins might be efficiently and safely combated by means of antiseptics. Some objected to the use of antipyretics altogether, on the ground that in fevers a continued high temperature is required to destroy bacilli and produce antitoxins: but the danger was that if the high temperature succeeded in killing the microbes it would also prove fatal to cells, and the patient's life might perhaps be sacrificed. Certainly, if we waited for the beneficent effect of heat in a case of sunstroke, we would soon have a corpse on our hands. In diseases such as typhoid fever, plague and pernicious fever the mortality, as a rule, varied according to the continuance of high temperature, and remissions always served to avert the danger, The multiplicity of the causes of fever proved its varied nature. In the treatment of its various forms it was often requisite that attention should be paid to the cause, but in other cases it was necessary simply to treat the symptom. To be satisfied with merely depressing the temperature was a mistake; but to allow a fever to run its course with continued high temperature was equally injudicious.

In the case of infants it was important to bear in mind that the powers of resistance were much feebler than in older persons. The rapid metabolism characteristic of this period of life and the facility with which hydremia was produced should always be taken into consideration. While high temperature might lead to convulsions early, it was his opinion that more infants perish by high temperature during convalescence than in the onset of the febrile diseases. We should never forget, however, that it was no degree of Fahrenheit, but an individual patient, that we always had to consider.

Taking up the subject of quinine, Dr. Jacobi briefly discussed the physiological action of the drug, and said that in fair doses it was certainly antipyretic. In malarial fever a single large dose had been known to excite fever, but this was due to the sudden contraction of the spleen which it caused. He gave in detail his method of administering quinine in the various forms of malarial fever, and said that except in pernicious continued fever its external use should, as a rule, be avoided during the height of the fever. In the case of children the palatability of the medicine was an important matter. The tannate of quinine might be given in larger doses than the sulphate, but he preferred the latter, which he used in the form of the fresh powder, disguising the taste by means of syrup of coffee or chocolate. When the remissions were very short it was a good plan to use an occasional dose of antipyrin, in connection with quinine, for the reduction of temperature. For forty years he had been in the habit of using ergot in cases of chronic intermittent fever, with tumefaction of the spleen, which had resisted quinine and arsenic, and with this agent he had succeeded in curing many apparently intractable cases, although he had noticed that the plasmodia did not seem to disappear from the blood as rapidly as in cases where quinine was successful.

Sometimes he had found that quinine or arsenic was efficacious after the use of ergot in cases which had before resisted these agents.

Salicylic acid was both an irritant and an antiseptic. In its physiological effect it was a paralyzing agent on the centres, and therefore differed from quinine, which acted directly on cell metabolism. In some cases it might be advantageously combined with quinine.

Antipyrin increased the tension of the pulse and the blood pressure, and was therefore contraindicated in hemoptysis. The peculiar exanthem resembling measles which it sometimes gave rise to (which, however, was seldom noticed except after the first dose) was apparently due to its action on the walls of the blood-vessels. Acetanilide, or antifebrin, did not disturb either the skin or the stomach, but it should never be given on account of the danger connected with its use. Being a derivative of aniline, it was certainly a poison. Phenacetin resembled it in its effects, but it was much milder. This agent, he thought, was frequently given in much larger quantities than there was any necessity for. In the case of adults he usually commenced with a dose of only three grains, and he employed a correspondingly small quantity in children. Lactophenin was industriously kept before the profession, and was not without value.

Alcohol had a great advantage over other agents on account of its rapid absorption from the stomach. In sufficiently large doses it was distinctly antipyretic, but it should always be given properly diluted. In the common varieties of aseptic fevers it was seldom required. In the septic fevers there was no better antiseptic than alcohol in large doses, and there was almost no dose of it that would not be well borne. He had not infrequently given as much as a pint of whiskey a day to a young child. As soon as the sepsis ceased, however, the alcohol would cease to be tolerated, and if it should be continued after that, at least in any large quantity, it would be attended by the ordinary symptoms of alcoholic intoxication. In the first stage of pneumonia it was not called for. Here there was a special reason for its not being given. It was known that four per cent. of the alcohol ingested is eliminated by the lungs, and it was not desirable that the lungs should be given this extra labor at that period of the disease. Alcohol was also contraindicated when there was nephritis.

Dr. Simon Baruch read a paper on

Hydriatic Measures in the Management of the Febrile Disorders of Infancy and Childhood, with a Practical Demonstration of Various Hydriatic Procedures.

He said he held that water was not an antipyretic, because this was not its only or even its chief agency. If called upon to define its action he would designate it as an antifebrile. Excessive shock and collapse had frequently been noted to result from cold baths, and this circumstance had led to their abandonment altogether in some quarters. Again, it had been argued that all fevers run a more or less definite course, and it was of no advantage to actively interfere. In this connection he paid a tribute to the good physicians, like Austin Flint, who had so nobly taken their stand against the system of depressing treatment formerly so universally in vogue. At the present day, however, there were many who contend that much can be gained by more or less active measures, and it might with truth be said that, except in the

case of malarial fevers, it was the sick child, and not the fever, that we had to treat. Various methods of treatment were of service in certain conditions, but a routine plan of treatment was positively baneful. All the advantages claimed for different agencies in the treatment, he believed, could be obtained by the intelligent use of water.

In the external application of water in the case of children the temperature employed should, as a rule, be considerably higher than under similar conditions in the case of adults. Thus, in typhoid fever, the bath for children should at first be at a temperature as high as 90°. The matter of friction while the child was in the bath was quite as important as in the case of adults. As the result of the cold-water bath there were produced a primary contraction of the peripheral blood-vessels, and afterwards relaxation of the vessels. When a toxic element was circulating in the blood and disturbing the vasomotor system, the pulse became soft, compressible, dicrotic. Consequently, extra labor was thrown upon the heart. The organ in time became exhausted, and we had the familiar catastrophe, heart-failure. The superiority of hydrotherapy lay in the fact that by means of it we could always combat the tendency to cardiac exhaustion. By the appropriate application of this method the cardiac systole was promptly enhanced, and the intelligent repetition of the hydriatic measures prolonged the effect. The external application of water had the effect of stimulating both the nervous and the vascular system, and these two great points were not secured by any other one agent of which he had any knowledge.

The field of action presented was practically unlimited. In some instances the full body bath was called for, in others, ablution, the wet pack, etc. Precise directions should always be given to the nurse. In one case that he had heard of the patient was placed in a bath of 106°, and the temperature was reduced to 60° without any friction of the skin being made. The judgment must be carefully exercised in adapting the mode of treatment to each individual case. The common practice of passing a cold sponge over the body of a fever patient was of doubtful value. In practising ablutions gentle mechanical irritation should always be employed, and this was best accomplished by means of gauze held in the hand. The temperature of the water used should at first be about 90°, and reduced one degree as a time until 60° was reached. Abdominal compresses should be of linen, covered with flannel, but no oiled silk should be placed over the latter. When the body temperature exceeded 103° a larger quantity of cold water should be used with the compress. In pneumonic fevers the patient should be placed in a full bath of 95°, the temperature of which should be reduced to 80° in from five to eight minutes, and the bath be followed by friction. In typhoid fever, on the other hand, the water of the bath should be cooled before the patient was placed in it, and the bath should be maintained for from ten to fifteen minutes, while drying was not advised.

Varying methods were required in accordance with the different conditions met with. In pneumonia a chest compress was of service, and he usually commenced its use with water at a temperature of 100°, and then gradually reduced it. In desperate cases of bronchopneumonia he ordered a stimulant affusion of 60° while the patient was in a body bath of 100°, and this almost invariably had the effect of ameliorating all the distressing symptoms. Cold affusions were also indicated in scarlatina, a disease in which full baths, as a rule, were not well borne. The very flexibility of hydrotherapy sometimes gave rise to difficulty in selecting the right measure in a given case, and there could be no question that more judgment and experience were necessary on the part of the physician than in drug medication.

Having quoted Dr. Jacobi and various French and German authorities on pediatrics in favor of hydrotherapy in children's diseases, Dr. Baruch proceeded to demonstrate some of its applications on the body of an adult subject. The bed should be so prepared, he said, that it would not be soiled, and in the case of a child it was best to have the patient on a cot. The use of the chest and abdominal compresses was first shown. These were made of oblong pieces of linen, long enough to pass completely around the body, and, having been dipped in the water of the required temperature, they were folded and carried around the chest and abdomen respectively. By turning the subject's body from one side to the other it was unnecessary to lift him from the bed. Outside the linen compress a flannel strip, cut slightly larger than the linen, was passed around the body in the same manner. The compress should be fitted snugly, no air being allowed between it and the surface of the body. A temperature of 60° was usually employed for the chest or abdominal compress.

The sheet bath was next shown. A linen sheet was dipped in water and not wrung out too much, as it was desirable that a considerable quantity of water should be retained. It was then folded about the body in such a way that no two surfaces should be in contact. In the case of a child the temperature of the water used should be 100°. The patient having been placed in the wet sheet, he should be rubbed successively all over the trunk, the water used for this purpose being at a temperature of 90°. As soon as any point on the surface ceased to react the hand of the rubber should pass on to another point. When this friction had been completed the patient should be covered up with a blanket, and allowed to go to sleep. The sheet bath, as thus applied, was almost as good as the regular Brandt bath, and it was an excellent substitute for the latter in tenement houses or in the country, where the facilities for tub bathing could not be procured. Dr. Baruch said he had known typhoid-fever patients who had had a temperature of 106° before being placed in the sheet bath to sleep for two hours and wake up with a temperature from one to two degrees lower. It might be repeated every two or three hours. Finally, the application of the wet pack was shown. Here the sheet was wrung out fully, and the patient, when the sheet was snugly covered by a blanket, created a vapor by his own body. It took three wet packs at 75° to reduce the temperature of the body to the same extent as one Brandt bath at 70°, and the latter was most certainly to be preferred in the treatment of fevers. In many chronic cases, however, the wet pack was of great service.

CREMATION IN THE UNITED STATES. — About 8,800 persons have been cremated in the United States up to the present time.

Recent Literature.

The Principles and Practice of Hydrotherapy. A Guide to the Application of Water in Diseases, for Students and Practitioners of Medicine. By Simon Baruch, M.D., Visiting Physician to the J. Hood Wright Memorial (formerly Manhattan General) Hospital; Consulting Physician to the Montefiore Home for Chronic Invalids; Member of the New York Academy of Medicine, etc. With numerous illustrations. New York: William Wood & Co. 1898.

This book, from an authoritative source, is a comprehensive study of the use of water in the treatment of disease. Medicine in this country owes much to Dr. Baruch for the insistence he has laid upon hydrotherapy, which has certainly been a much neglected method of treatment, partly from its supposed expense, and more, no doubt, from the general ignorance of practitioners regarding its use. That its possibilities are coming to be more generally recognized is evident, and this is largely due, in our opinion, to Dr. Baruch's painstaking work in the exposition of the subject.

The volume before us is a bulky one of four hundred and thirty-five pages, logically arranged. The physiological action of water is discussed, and its effect upon various body processes, followed by a detailed and valuable discussion of the technique of baths and the application of water, in general. This portion of the book, worked out in a spirit of scientific exactness, is most heartily to be recommended. We are in entire accord with the writer when he deprecates the prevalent fallacy that "water is so simple and innocuous a remedy that it may be applied with less regard for precision than the physician is wont to exercise in prescribing medicinal remedies." In many therapeutic measures this fallacy is observable, and it is to this, doubtless, that many therapeutic failures may be attributed. The greater part of the remainder of the book is taken up with a consideration of the use of water in individual diseases, interspersed with the report of clinical cases, which adds much to the practical value of the discussions. The author is a decided believer in the use of baths in typhoid fever, as one would expect.

The concluding chapter is a valuable historical epitome of hydrotherapy, and closes with a strong plea for the necessity of instruction in hydrotherapeutics at our medical schools, which again we most willingly endorse.

The book is written by an ardent student of the subject, who has himself accomplished definite results, and it should serve as a stimulus to physicians to make use of this means of treatment in their individual practices, modified as necessity demands.

The volume is illustrated sufficiently to make clear the varied procedures, and is well printed and bound; it should certainly find a place in every physician's library.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., etc. Illustrated. Third edition. Revised. Philadelphia: W. B. Saunders. 1899.

The third edition of this book follows the second at an interval of less than a year. In general, the book preserves essentially its previous arrangement and does not require renewed reviewing. The section on Infectious Diseases has been carefully revised in accordance with recent advances in bacteriological research. Some articles have been rewritten, and some revised, and some new subjects have been added; six new illustrations of microscopic preparations have been added, and the index has been enlarged.

Massage and the Swedish Movements. Their Application to Various Diseases of the Body. By Kurre W. Ostrom. From the Royal University of Upsala, Sweden. Fourth edition. Revised and enlarged. With 105 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

If the title of this convenient little book was "Swedish Movements and Massage," it would more closely define its subject matter. The book deals pre-eminently with movements. The chapter on the History of Massage and the Bibliography will be interesting and useful to students of the subject, while the General Remarks on Massage and the Massage Treatment in America deserve the attention of the physician. We are glad to see that the author believes that the patient should have treatment from one of the same sex, and that he urges the doctor to inquire into the source of training of his operator.

The prominence given by Ostrom to movements over massage is well exemplified by what he says of massage of the head, where stroking and percussion are employed to the exclusion of true massage in the American sense of the term. The recommendations for the free use of oil are rendered necessary by Swedish methods.

The plates found in the book are from Hartelius. The English, though that of a foreigner, needs comparatively little criticism.

International Directory of Laryngologists and Otologists, Containing Names and Addresses of Practioners engaged in the Study and Practice of Laryngology and Otology. Compiled by Richard Lake, F.R.C.S. London: The Rebman Publishing Co. 1899.

This little pocket directory will be found both useful and interesting. Its use is self-evident. Among its points of interest we find that there are under New York 117 names; Berlin, 101; Chicago, 86; London, 53; Paris, 50; Vienna, 25; Philadelphia, 24; Boston, 19. The Boston list is not as accurate as it should be.

Acromegaly. By Guy Hinsdale, A.M., M.D. Pp. viii, 88. With 23 illustrations. Detroit: Wm. M. Warren. 1898.

This essay, to which was awarded the Boylston prize for 1898, is reprinted from *Medicine.* The author has analyzed 130 cases, has collected a bibliography of 377 references, and has described in detail the skeleton of the American giant in the Mütter Museum of the College of Physicians in Philadelphia. The essay contains nothing particularly new, but it gives a valuable summary of the literature of the subject, especially upon the question of the physiological action of the pituitary body. All who are interested in this rare disease and its relations to gigantism will find this volume a trustworthy and complete summary of our present knowledge.

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PROGRESSIVE SURGERY.

SURGICAL practice is constantly preparing surprises for us. Some new organ is successfully operated upon by a man of distinction and the remainder of the surgical world at once follows with further experience and more results. This enthusiasm has sometimes appeared to the conservative onlooker as an excess of zeal, which, in the interests of true progress, he would like to see controlled and restrained. If we are not mistaken, a certain reaction against purposeless operations has taken place in the last few years. We hear less often than we used the weak excuse that the operation will do no harm, even if there be only the remotest possibility of its doing any good. The surgeon, armed as he is with a highly perfected technique, needs judgment and self-control more than most men. Undoubtedly our best surgeons have both of these qualities, which makes a lapse on the part of the minority all the more reprehensible.

We hope that in approaching the problems of the newest field of major surgery, that of the stomach, a conservatism bred of experience with other organs will prevail. Apart from occasional operations on this organ, operative interference is of comparatively recent date. It has already accomplished extraordinary results, particularly in operation for perforated ulcer. Statistics, although admitting an element of error, undoubtedly show a very large percentage of cures, when the perforation has been closed relatively few hours after its occurrence.

This is certainly most encouraging, and must unquestionably be looked upon as an established surgical procedure. When we realize, also, that the entire stomach may be removed without serious detriment to the patient's general health, we can easily see that a beginning merely has been made in the field of stomach operations. If this is the beginning one questions rather anxiously what the end is going to be?

Already we find many advocates of more radical procedures than have yet been attempted; for example, operation on stubborn gastric ulcer which has not yet perforated, or for dyspeptic symptoms which have resisted medical treatment and may be masking more serious affections, like carcinoma. At a recent meeting of the New York Academy of Medicine, Dr. B. Farquhar Curtis reported two early cases in which he believed he had anticipated the development of cancer, or had at least removed the diseased tissue in its earliest stage. All this is distinctly in the line of progress, but, encouraged by such results, we should certainly not allow our enthusiasm to carry us too far. It is merely a step from this to operations on the stomach for symptoms which bear no necessary relation to serious underlying conditions, and it is just here that conservatism, tempered with the most careful judgment, is imperatively called for. We have not yet reached the point where the normal appendix is removed as a routine measure, because it may at some future time be the seat of disease, and, although the cases are not completely parallel, it is hoped that operation on the stomach for disease which has not yet appeared may continue to be regarded as irrational.

The *Medical News* in a recent editorial communication, speaking of Dr. Curtis's cases, makes the following statements: "The step in advance then that is suggested by the proposal to operate before definite signs of cancer have presented themselves, promises to be a gain for surgery, provided certain reasonably sure indications for operative intervention can be established. The proposal to resort to surgery in obstinate cases of dyspeptic trouble, will not seem too radical to those who have realized the hopelessness of ordinary medical treatment in many of them. . . . If by these operations for obstinate gastric dyspepsia, the development of cancer of the stomach could sometimes be anticipated, as would undoubtedly be the case, for long-continued gastric irritation predisposes to cancer; or, as in Dr. Curtis's cases, if the cancer could, by a fortunate chance, be discovered before it had given rise to any characteristic symptoms of a malignant neoplasm, a most fortunate benefit would be secured for the patient and a great surgical triumph scored."

This is dangerous reasoning, It implies that we should look for a chance to operate, in the distant hope of preventing the development of a disease which occasionally supervenes in long-continued gastric irritation, evidently quite an insufficient ground. The argument that a resort to surgery is permitted because medical means have proved ineffectual is again a justification too often used for operation when definite indications fail. In our opinion the surgeon should operate only when his operation promises definite results, and never for the merely negative reason that no harm will be done. Otherwise we are opening the door rather too wide. To operate on the stomach in the hope of eradicating what has not yet developed is certainly a departure from which even the most radical surgery must shrink. We can hardly believe that the conscientious surgeon would ever consent to be placed in such a position; in spite of im-

proved technique, we should not forget that the surgery of the internal organs is never a trivial matter, and should only be undertaken where indications are clear, and the hope of relief at least probable.

Undoubtedly, the surgery of the stomach has before it a brilliant future, but we trust a conservatism will prevail from the beginning which will permit no vain regrets, when through experience the exact limitations of surgical treatment are ascertained.

THE NURSE AS A SPECIALIST.

We have from time to time wondered what is to happen to the nurses in the present rapid development and differentiation of medical practice. We accept the fact of specialism among physicians with varying degrees of equanimity, depending upon our education and prejudices, but with a natural conservatism we are inclined to protest against a like tendency among nurses. Nevertheless the inevitable has happened, and nurses are already specialists. Go to a directory and one is met with the query as to whether one wishes a surgical, or an obstetric, or a general medical nurse, or one experienced in caring for the insane. Each of these varieties is recognized, and no doubt many more will spring into being as the demand arises. The situation is certainly an interesting one, and one to which attention must sooner or later be directed as regards the prescribed course of training. It is evident that certain hospitals offer opportunities which others do not, and that a special training may be had in one which would be quite impossible in another. The result is that nurses skilled in the care of certain types of disease are being turned out in greater numbers year by year, who are likely to find employment only in one branch of medical practice.

This means specialism for nurses, a fact which we should clearly recognize, and not too deeply regret, since it is unavoidable. No doubt this question will finally settle itself, as do many others over which we vainly lament. In the meantime it behooves us to readjust our training schools to meet the coming requirements.

MEDICAL NOTES.

Appropriations for the Paris Exposition. — Massachusetts, New York and California are the only States which have made a special appropriation for the Paris Exposition, in distinction from that of the United States Government. Monographs on various subjects connected with education, social economy and hygiene are being prepared at the expense of the State of Massachusetts, but having reference to the country at large.

Loomis Sanitarium Fire. — Although the Administration Building of the Loomis Sanitarium was totally destroyed by fire on October 14th, the work of the institution has gone on uninterruptedly, the Casino Building having been temporarily adapted to the purposes of administration. It is expected that a new Administration Building will be completed within a few months. None of the patients' cottages were at all injured by the fire.

Distribution of Mortality through the Year in New York State. — It has been estimated in an interesting series of statistics made by the New York State Board of Health that the uniformly unhealthy months in that State are April, July and August, whereas the uniformly healthy months are May, October and November. November has regularly almost or quite the lowest mortality of any month in the year, from four-fifths to seven-eighths the annual average, while July has twice been about one-quarter higher than the average for the year. Midsummer is thus in this State the most unhealthy season and late fall the most healthy season of the year.

The Hospital Ship "Maine." — The hospital ship for use in the British service now being fitted out by wealthy Americans in England for service in the war against the Transvaal, called the *Maine*, is American throughout, but will carry an English crew and corps of attendants — the superintendent alone being an American. It is understood that a prominent drug manufacturing firm of the United States has offered to furnish a full supply of medicine for her outfit without cost. It would be well if, in fitting out this ship, advantage were taken of the experience of the Massachusetts Volunteer Aid Association in preparing a similar ship, the *Bay State*, for service in the Spanish-American War, an account of which is given by Medical Inspector Siegfried, United States Navy, in our issue of August 11, 1898, and still more fully by others in our issue for January 19, 1899.

Medico-Legal Section, International Congress of Medicine. — The following questions will constitute the subjects of reports at the Medico-Legal Section of the International Congress of Medicine; (1) "Pulmonary Docimacy," reports in French (French *Rapporteur*), Messrs. Descoust and Bordas; (2) "Actions (the effects) of the New Smokeless Powder on Garments and the Skin," reports of Messrs. Thoinot and Vieille; (3) "Ocular Putrefaction as a Means to Determine the Date of Death," report of M. Descoust; (4) "The Criminal Combustion of Corpses," report of M. Ogier; (5) "On Accidental Death by Electricity," reports of Messrs. d'Arsonval and Bordas; (6) "Valvular Lesions Consequent upon (resulting from) the Traumatism of the Walls (coats) of the Thorax," reports of Messrs. Castiaux and Langier; (7) "Expert Examination Rendered Necessary by the Accidents which might Result from the Frequent Use of Food or Drinks which have been Conserved by Chemical Agents" [borax, salicylic acid, formol, etc.], reports of Professor Brouardel and Pouchet; (8) "On Crimes (offences) Resulting from the Practice of Magnetism by Persons who have no Diplomas," reports of Messrs. Gilles de la Tourette and Rocher; other questions can be treated by the members of the Congress who are in-

vited to notify in advance the general secretary of the title of their communication. Clark Bell, LL.D., of the New York Medico-Legal Society, is Chairman of the American Auxiliary Committee of this section.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, November 8, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 68, scarlatina 30, measles 14, typhoid fever 20.

THE PROGRESS OF CREMATION IN BOSTON. — It is stated that more incinerations have been made in Boston than in any other United States city, with the exception of New York, St. Louis, Philadelphia and San Francisco, in spite of the fact that cremation has been practised here only six years.

A CENTENARIAN. — Mrs. Eunice Slade, of Walpole, N. H., has passed her one hundredth birthday. Her oldest child is eighty-one years old.

MALDEN TO HAVE FREE VACCINATION. — As a protective measure, owing to the occurrence of small-pox in neighboring towns, the Malden, Mass., Board of Health has recommended general vaccination.

THE SMALL-POX SITUATION IN CHELSEA. — Two new cases of small-pox have been discovered in Chelsea, but the spread of the disease has probably been checked. The Board of Health has taken possession of an abandoned schoolhouse, with the intention, it is said, of fitting it up for a quarantine station for persons who are suspected of having been exposed to the disease.

FEWER CONTAGIOUS DISEASES IN CAMBRIDGE AND BROOKLINE. — It is thought that the worst of the epidemic of typhoid fever and diphtheria in Cambridge is over. The Board of Health is continuing, however, to make preparations for using an improvised house on Huron Avenue as a temporary hospital. The situation in Brookline as regards diphtheria and scarlet fever is also rapidly improving. The number of cases reported to the Board of Health is rapidly decreasing.

TYPHOID FEVER EPIDEMIC AT COLLINSVILLE. — The spread of typhoid fever at Collinsville, near Lowell, is reported as considerable. Twenty-eight cases have been reported. An investigation showed the cause of the disease to be contaminated well water.

VACCINATION OF SCHOOL CHILDREN IN EVERETT. — An examination of the scholars in the Everett public schools is being made to ascertain how many have been properly vaccinated. When the examination is completed the order recently issued by the School Committee, compelling the parents of school children to comply with the provisions of the statutes which require all children attending school to be properly vaccinated, will be rigidly enforced. This is a precautionary measure, since at present there are no cases of small-pox in Everett.

NEW YORK.

MONTEFIORE HOME. — At the annual meeting of the Directors of the Montefiore Home for Chronic Invalids, which was held on October 29th, the treasurer's report showed the unusual and gratifying fact of a surplus of over $42,000, the receipts during the year having been $77,086, and the expenditures $34,872. Of the gifts received, one of $3,900 was for the support of the country sanitarium of the Home. Of the 577 patients treated during the year only eight were pay patients, and at the close of the fiscal year there remained in the institution 281 inmates.

A MEMORIAL TO SAMUEL WARREN. — In St. James's Protestant Episcopal Church on All Saint's Day, November 1st, a beautiful memorial window was unveiled in honor of Samuel Warren, author of "Ten Thousand a Year," and "Passages from the Diary of a Late Physician"; he was the father of the rector of the parish, the Rev. Dr. E. Walpole Warren.

CHARLES INSLEE PARDEE, M.D. — Dr. Charles Inslee Pardee, for twenty-five years Dean of the Medical Department of the University of the City of New York, died suddenly on November 3d, of cardiac disease. He was sixty-one years old, and a native of New York City. He was graduated from the University Medical School in 1860, and served with distinction as a surgeon through the Civil War. Later he became a specialist of high repute in diseases of the eye and ear.

ALFRED T. DRURY, M.D. — Dr. Alfred Thomas Drury died at his home in Brooklyn, N. Y., on November 1st. He was born in Hull, Eng., January 8, 1830, and was a graduate of the Vermont Medical College. He leaves a son, Dr. George Drury, of Brooklyn.

ARMY NOTES.

CASUALTIES AND DEATHS AMONG REGULAR AND VOLUNTEER SOLDIERS, MAY 1, 1898–JUNE 30, 1899. — A recapitulation of the casualties in action and the deaths in the regular and volunteer armies between May 1, 1898, and June 30, 1899, contained in the annual report of the Adjutant-General, just made public, shows a grand total of 10,076 men. The casualty list alone aggregates 3,454, of whom 35 officers and 458 enlisted men were killed and 197 officers and 2,764 enlisted men were wounded. The death list, numbering 6,619, was made up of 224 officers and 6,395 enlisted men. From this total is subtracted the number of officers and men killed in action, as noted above, the remainder of the deaths resulting from various causes, including the following: Wounds, 10 officers and 192 enlisted men; disease, 165 officers and 5,344 enlisted men; accident, 6 officers and 209 men; drownings, 3 officers and 88 men; suicides, 2 officers and 52 men, and murders or homicides, 52 enlisted men. In the regular army the total casualties in action and deaths amounted to 4,155, and in the volunteer establishment to 5,921. In the casu-

alty list the regulars had 127 officers and 1,856 enlisted men killed and wounded, and the volunteers had 105 officers and 1,366 enlisted men killed and wounded. In the regular army there were 2,946 desertions by enlisted men during the period mentioned.

THE ARMY HOSPITAL SHIP "RELIEF." — The United States Army hospital ship *Relief*, as to the unseaworthiness of which so much criticism has recently been made, has arrived at Manila without any untoward incident. In view of the allegations made against her stanchness much of her cargo and all persons except her crew were removed prior to sailing from San Francisco. She will be used at Manila as a floating hospital and will also ply, as required by necessity, among the various islands of the Philippine group.

Miscellany.

RULES AND REGULATIONS OF THE INTERNATIONAL CONGRESS OF MEDICINE.

THE Thirteenth International Congress of Medicine will open at Paris on August 2, 1900, and will close on August 9. Its object is of an exclusively scientific nature. Membership will be granted to all doctors of medicine who apply; to the representatives of science who shall be presented by the French Executive Committee or by the foreign national committees. Members will receive their cards on forwarding the sum of twenty-five francs (one pound) to be paid to the Treasurer-General of the Congress. This card will be required for admittance, and to secure for the members the advantages reserved for them. The foreign committees may receive the adhesions of members of their respective nationalities. The committees will hand over the payments received, to the French Secretary-General, who will supply them in return with members' cards in number corresponding to the payments. In forwarding payment to the treasurer, members should put their name, profession and address plainly and legibly, and subjoin their visiting card. Among other advantages, members will be entitled to receive a digest of the proceedings of the Congress, and the printed report of the section to which the member belongs.

The Congress will be divided into the following sections: Biological sciences; medical sciences; surgical sciences; obstetrics and gynecology; public medicine.

An executive committee and an organizing committee will have charge of the preparations and work of the Congress. The Congress will sit every day, whether in the form of general assemblies, or of meetings of each section. Two general assemblies will be held. The first will take place on the opening day of the Congress. The second will be held on one of the ensuing days. The first general assembly will elect the honorary presidents of the Congress. The speeches and addresses, together with the voting ruled by the standing orders, will occupy the entire time of general assemblies. Those members will alone speak who have been appointed or invited by the Executive Committee. All proposals relative to the course or nature of the proceedings of the Congress should be communicated to the Executive Committee before May 1, 1900. The Committee will decide in what measure these proposals shall be countenanced. Each sectional committee shall draw up its own working programme (papers to be read, discussions on the subjects proposed, miscellaneous communications). The speeches delivered at the general assemblies, and the papers read before the sections will be published in the record of the proceedings of the Congress; respecting the miscellaneous communications and the discussions, the Executive Committee reserves full right of discrimination. Each communication will be limited as to time to fifteen minutes, and the speakers who take part in the discussions will be limited to five minutes. The papers, communications and record of the discussions must be lodged, on the same day, with the secretary of the section. The French language is adopted as the official language by the Congress in all international relations. In the general assemblies, likewise in the sectional meetings, the German, English and French languages may be employed. All matters relating to the proceedings of the sections, questions submitted for discussion, etc, are to be laid before the president of the committee of the section. Matters concerning the general organization, business of the Congress, etc., are to be referred to the Secretary-General of the Congress. The second general assembly will meet to determine where the next Congress will be held and to elect the Bureau.

Members desiring to present papers will forward them to the secretary of the section to which they belong, for each sectional committee reserves to itself the right of drawing up its own working programme.

A BOARD OF EXAMINERS IN MEDICINE, PHARMACY, DENTISTRY, ETC., IN PUERTO RICO.

A RECENT order establishes a board of examiners for the practice of medicine and surgery, pharmacy, dentistry and midwifery on the Island of Puerto Rico. This board consists of three medical men of not less than ten years' practice, legal graduates and of recognized ability in their professions; two graduates in pharmacy and one graduate in dentistry, possessing the same professional standing. The examining board is appointed by the Board of Health for the island and, for purposes of administration, is divided into subcommittees. This examining board is to act under regulations prescribed by the Board of Health and is to hold its sessions in the city of San Juan. The fees received, after all expenses are paid, are to be divided among the members of the board according to the number of applicants examined by each. The fees required are: for physicians and surgeons, dentists and pharmacists, $25; for "practicants" (qualified assistants), $15; for professional nurses, $10; for midwives, $5.00. All applicants for the right to practise must first present their diplomas or certificates to the secretary of the Board of Health, together with certificates from at least two reputable persons as to the good moral character of the applicant. If these credentials are satisfactory the candidate will be authorized to present himself for examination. The questions to be asked must be submitted to the Board of Health and after approval must be used with all individuals examined in the same class. All examina-

tions are to be held in writing. At the conclusion of the examination the papers are to be marked and the recommendation of the Board as to each candidate, together with papers in the case, are to be forwarded to the Board of Health for final action. Licenses to practise are issued only by the Board of Health, an additional fee of $5.00 for such license being charged for all, except nurses and midwives. Applicants who possess diplomas from reputable medical or dental colleges and who have been licensed by State boards in the United States, *after an examination*, may, in the discretion of the Board of Health, be licensed without an examination on payment of the fee of $25. The fees paid by unsuccessful applicants for license are not returned; but such unsuccessful applicants may, with the approval of the Board of Health, be examined at any time after six months and within two years without the payment of any additional fee.

TERMS OF COMPARISON.

THE *Medical Press and Circular* expresses certain facts in the following passage which our medical teachers would do well to take to heart.

"We have more than once animadverted on the vagueness and incongruity of the terms of comparison so commonly employed by physicians, surgeons and pathologists, in attempting to give a picture estimate of size. There is the conventional millet seed, but it is open to question whether the botanical knowledge of the average reader enables him to identify this particular agricultural product. Though better known, the size of a filbert is equally uncertain, for its dimensions vary within fully as wide limits as the orange. We are all familiar with the tumor which is described as the size of the fist, but every pugnacious schoolboy is aware that there are fists and fists, some of comparatively little import from an offensive point of view, while others inspire respect if not awe. The fetal head is possibly less variable in size than some of the objects just referred to, but even then the observer ought at least to take the precaution to state whether he means the head of the fetus at term or at some earlier period of pregnancy. It would be much more scientific to give the dimensions in inches or centimetres, using fruits and seeds, foot-balls and fetal heads merely to indicate the approximate shape. It may be permissible to describe the terrestrial globe as having the shape of an orange, but it would be grotesque to explain that it was so many times larger than this fruit. For all practical purposes those who make use of these terms of comparison might as well say right out that the growth was 'about the size of a lump of chalk.'"

PAINLESS EXECUTION.

THE *British Medical Journal* thus takes us to task: "Our American cousins are — in spite of an occasional 'deviation from humanity' in the direction of lynching — a tender-hearted people. For a long time they dropped the tear of sensibility over murderers who were subjected to the barbarous procedure of being 'worked off,' to use the classic phrase of a great artist in that line. In deference to this delicate sentiment hanging was some years ago abolished in New York State, and victims of the law were helped to shuffle off their mortal coil with ease and despatch by electrocution. But still the Transatlantic philanthropist is not happy. Electrocution is said to be uncertain in its action; and, indeed, it has even been suggested that the post-mortem examination which is made immediately after the sentence of the law has been carried out is intended to be the *coup de grâce*, or at any rate to 'mak' sikkar.' Moreover, it is believed that in some cases, at least, electrocution causes pain. With the view of making execution painless, therefore, it was recently suggested in a paper read before the American Association for the Advancement of Science to inflict the last penalty of the law by the administration of hydrocyanic acid under conditions that will ensure death being painless. For this purpose the criminal is to be taken to a 'death chamber,' which is to be connected by pipes with retorts generating the poisonous vapor, and sometime when the patient is asleep the lethal gas is to be turned on, and he will quietly be absorbed into the infinite. The plan only requires the addition of a little slow music to make it realize the aspiration of the poet who prayed that he might drift through sweet sounds to a dream, and through a dream to death. To prevent any needless harrowing of the criminal's feelings by the contemplation of a steadily approaching end, the date of execution is not to be fixed, but is to be left to the discretion of the authorities within certain limits extending over a period of several months. The idea does the greatest credit to the humanitarian sentiment to which it owes its conception. The plan appears to us, however, to have one trifling drawback: the prospect of so luxurious an exit from the stage of this dull world is likely to lead to a large increase of capital offences. Who, indeed, some may be disposed to exclaim, would fardels bear to grunt and sweat under a heavy life when he might find such a quietus by the easy and pleasant method of sticking a bare bodkin into some one whom he disliked?"

AN UNPARDONABLE INDIGNITY.

THE *New York Medical Record* makes the following editorial comment on the recent unjustified treatment of two New York physicians:

"Few greater outrages have been committed upon medical men in New York than the arbitrary arrest last week of two reputable physicians, Drs. Purdy and Maier, who had been called to a charity case, seeing it but once, and who subsequently recommended that the patient, who was a poor woman, should be taken to Bellevue Hospital, where she died a few days later. An autopsy was held, about the results of which there seems to have been some justifiable difference of opinion, and the matter was left to the police for 'investigation,' it being alleged that the cause of death was criminal abortion. The patient had during life presented the symptoms of acute articular rheumatism and endocarditis, and the existence of pelvic symptoms was not even recognized or suspected by the doctors or by the visiting staff of Bellevue, or, in fact, any one else except the astute coroner's physician. The 'investigation' of the police captain consisted in finding out the names of the physicians who had last seen the patient, and after being pilloried in the yellow journals, and subsequently spending

a morning in the coroner's court, they were 'exonerated' by the coroner and the jury; and will for some time suffer from the stigma of a false arrest in a questionable case.

"If this sort of thing is allowed to go on, any doctor may be dragged to a police station at the pleasure of any autocratic coroner or any over-zealous and notoriety-seeking police captain."

THERAPEUTIC NOTES.

Vomiting of Phthisis. — Berthier[1] frequently observed in patients with commencing pulmonary tuberculosis fits of coughing early in the morning or after the evening meal, followed by vomiting, which he considers as a sort of pulmonary reflex, this, in its turn, exciting nausea, on account of a hyperesthetic condition of the pharynx, the so-called pharyngeal hyperesthesia; to stop this vomiting it is necessary to cause the disappearance of this hyperesthesia. To effect this purpose Berthier resorts to the employment of two-per-cent. solutions of cocaine, with which he swabs the posterior pharynx a couple of hours before the expected attack of vomiting. In three or four days of such treatment the hyperesthesia disappears. The treatment is then discontinued until the reappearance of another attack. Two or three repetitions of the treatment are entirely sufficient to bring about a cure of the trouble.

Salophen in Acute Articular Rheumatism. — To avoid a possible recurrence of the symptoms of this disease, even when salicylic acid had been employed for a few days, Mosler[2] resorts to the use of salophen in doses of 30 to 45 grains per day, after the acute symptoms, such as pains, swelling of the joints, and fever, have been set aside by the previous use of the salicylate. The salophen thus employed must be used for several days. According to the author, the drug is free from any deleterious effect on the stomach or the nervous system; he administered as large doses as one to two drachms daily, for several days, without any harm. It is also useful in rheumatic chorea, and serves as a reliable analgesic and antineuralgic.

Ichthyol in Measles. — Dr. Stizover[3] employs, and, he reports, with great success, a salve made up of ichthyol, thirty parts, and axungia, ninety. This is rubbed on twice a day, in the morning and in the evening. If the treatment is begun before the appearance of the eruption on the surface of the body, but when it is detected already on the mucous membrane of the oral cavity, the course of the disease may be completely interrupted; the eruption does not come out, fever is absent and the child gets well rapidly. But even if applied at a time when the skin is already covered with the eruption, then, after one or two applications, the temperature falls and the eruption pales and finally disappears altogether. In the course of four or five days the patient is entirely cured. To rub off the salve the child is given a warm bath.

Ice Bags in Pyrexia. — The continuous applications of ice bags to combat high temperature has recently been enthusiastically recommended by Dr. Lockard.[4] It is simpler and easier of application than such procedures as cold baths, packing and the like. The bags are applied to that portion of the body where the arteries are nearest to the skin, and the application is continued until the temperature becomes normal. The drawbacks to the employment of the ice bags are not to be compared with what we encounter when, for instance, using cold baths, for the patient need not leave his bed. The number of bags and their method of application will depend on the nature of the disease and the height of temperature. As soon as a fall of temperature is observed, the number of bags must at once be diminished, and, in a general way, it must be observed that a sudden lowering of temperature must be guarded against. For fever of moderate degree four bags will suffice — thus in both armpits and the popliteal spaces; if fever runs high, then the bags to the nape of the neck, to the joints of hands and feet. In pneumonia, headache, pericarditis, and arthritic affections the application is made over the affected part. The effect on the temperature is usually manifest in the course of one hour after the application of the bags, and if continued carelessly, even subnormal temperature may take place.

[1] Gazette Méd. Belge.
[2] Deutsche med. Woch.
[3] Memorabilia, No. 1, 1899.
[4] Centrb. f. d. ges. Therapie, August, 1899.

Correspondence.

VACCINATING WITH IVORY POINTS.

South Boston, Mass., October 31, 1899.

Mr. Editor: — The ordinary manner in which the ivory point is used when vaccinating is to first scarify the skin with the dry point, and then to wet the point and rub the virus into the denuded surface. By varying this technique slightly, I find a much better result in the percentage of cases that "take."

The variation consists in wetting the point before scarifying. Thus, in using the moistened point to denude the surface of epithelium, we are simultaneously introducing the virus, and this, I believe, explains the better result. This note may be of interest at the present time, when so much vaccinating is needful to protect communities.

Respectfully,

Edward A. Tracy, M.D.

METEOROLOGICAL RECORD

For the week ending October 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...22	30.45	44	54	34	57	42	50	W.	S.W.	8	6	C.	O.	
M..23	30.37	48	52	45	79	80	80	W.	N.	6	4	R.	F.	.03
T...24	30.49	50	53	46	81	82	82	N.	S.E.	5	8	O.	O.	
W..25	30.36	63	75	49	87	76	82	S.W.	S.W.	9	12	F.	C.	
T...26	30.16	65	74	56	67	57	62	S.W.	W.	10	9	F.	C.	
F...27	30.20	56	62	50	77	98	88	N.	N.E.	7	10	O.	R.	
S...28	30.12	56	61	50	97	94	96	E.	S.	4	3	G.	O.	.01
☞														

* C., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 28, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1130	398	8.56	11.20	1.76	1.60	2.96
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,366,832	342	119	13.20	12.90	2.70	2.80	6.30
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	202	58	7.35	13.23	1.96	1.47	1.47
Baltimore	506,389	166	50	14.40	15.00	6.00	1.20	6.00
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	—	—	—	—	—	—	—
Washington	277,000	97	25	13.39	22.66	4.12	5.15	4.12
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	46	11	13.02	8.68	6.51	—	4.34
Nashville	87,754	22	9	9.05	8.30	12.45	—	16.60
Charleston	65,165	25	8	8.00	12.00	4.00	—	4.00
Worcester	111,732	24	16	20.80	4.16	12.48	—	—
Fall River	103,142	—	—	—	—	—	—	—
Cambridge	92,320	18	6	47.04	11.76	11.76	11.76	17.64
Lowell	90,114	29	9	3.45	24.15	—	—	3.45
New Bedford	70,511	18	5	11.76	17.64	—	11.76	—
Lynn	68,218	19	4	5.26	—	5.26	—	—
Somerville	64,394	9	5	22.2	11.11	—	—	11.11
Lawrence	59,072	14	6	21.42	7.14	7.14	7.14	—
Springfield	58,266	8	2	25.00	25.00	—	—	25.00
Holyoke	44,510	10	7	10.0	—	—	—	10.00
Brockton	36,759	—	—	—	—	—	—	—
Salem	37,723	7	3	14.28	—	—	—	14.28
Malden	36,421	7	—	—	14.28	—	—	—
Chelsea	34,235	18	5	—	5.88	—	—	—
Haverhill	32,651	7	2	14.28	14.28	—	—	—
Gloucester	31,426	5	2	40.00	20.00	—	—	—
Fitchburg	30,523	5	2	—	20.00	—	—	—
Newton	30,461	10	4	—	—	—	—	—
Taunton	28,527	17	6	17.64	5.88	—	11.76	—
Everett	28,102	5	1	—	20.00	—	—	—
Quincy	24,578	—	—	—	—	—	—	—
Pittsfield	23,414	—	—	—	—	—	—	—
Waltham	22,791	2	—	—	—	—	—	—
North Adams	21,583	6	2	16.66	—	—	16.66	—
Chicopee	18,316	9	2	11.11	33.33	—	11.11	—
Medford	17,190	6	2	—	—	—	—	—
Newburyport	15,939	3	1	33.33	—	—	—	33.33
Melrose	14,721	2	1	—	—	—	—	—

Deaths reported 2,303; under five years of age 778; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 259, consumption 295, acute lung diseases 279, diphtheria and croup 94, diarrheal diseases 64, typhoid fever 43, whooping-cough 18, cerebro-spinal meningitis 15, scarlet fever 13, measles 8, erysipelas 4.

From whooping-cough New York 9, Philadelphia 4, Boston 2, Washington, Providence and Cambridge 1 each. From cerebro-spinal meningitis New York 6, Boston and Worcester 2 each, Lynn, Somerville and Gloucester 1 each. From scarlet fever New York and Philadelphia 4 each, Boston, Washington, Haverhill, Gloucester and Amesbury 1 each. From measles New York 8.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 21st, the death-rate was 19.0. Deaths reported 4,160; acute diseases of the respiratory organs (London) 306, diphtheria 129, diarrhea 103, fever 82, measles 75, whooping-cough 35, scarlet fever 33.

The death-rates ranged from 9.8 in Croydon to 28.4 in Liverpool; Birmingham 19 5, Brighton 13.1, Cardiff 15.2, Gateshead 21.0, Hull 16.9, Leeds 19.3, London 18.0, Manchester 23.6, Newcastle-on-Tyne 20.3, Sheffield 20.6, West Ham 18.4.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 3, 1899.

R. SPEAR, assistant surgeon, detached from the "New York," ordered home and granted sick leave for two months.

R. K. MCCLANAHAN, assistant surgeon, detached from the Naval Hospital, Key West, Fla., and ordered home and granted sick leave for two months.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Clinical Medicine, Pathology and Hygiene will hold its meeting at 19 Boylston Place, Wednesday, November 15, 1899, at 8 P. M.

At 8 o'clock: Dr. R. F. Chase will report "A Case of Brachycardia."

At 8.15 o'clock: Dr. J. W. Courtney will present "The Report of an Interesting Brain Case."

At 8.30 o'clock: Dr. V. Y. Bowditch will read a paper entitled "The Massachusetts State Hospital for Consumptives at Rutland; Its Purpose and the Work Accomplished during its First Year." Discussion by Drs. F. I. Knight, E. O. Otis and A. Worcester.

J. BERGEN OGDEN, M.D., *Secretary*,
Harvard Medical School, Boston.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS.— The ninth annual meeting of the Association will be held in the Academy of Medicine, No. 17 West Forty-third Street, New York City, Thursday, November 16, 1899.

RECENT DEATHS.

LUTHER DANA WOODBRIDGE, M.D., M.M.S.S., died in Williamstown, November 3, 1899, aged forty-eight years.

ADAM CALHOUN DRANE, M.D., M.M.S.S., died in Greenfield, November 7, 1899, aged seventy-eight years.

J. K. PHILLIPS, M.D., of Bangor, died November 5th, at the Eastern Maine General Hospital, after an illness of several days. Dr. Phillips was born in Bangor, February 25, 1858. He prepared for college at Andover Academy and entered the Harvard Medical School, taking a four years' course and graduating in 1885. The following two years he was interne at the Massachusetts General Hospital. He studied also in Germany and Dublin. Dr. Phillips came to Bangor in 1888, and had since been engaged in the practice of his profession there. He was a surgeon of ability and was one of the visiting surgeons of the Eastern Maine General Hospital. He was a member of the Maine Medical Association and of the Penobscot County Medical Association, of the Harvard Club of Bangor and of the Harvard Medical School Alumni Association.

BOOKS AND PAMPHLETS RECEIVED.

A Text-book of Diseases of the Nose and Throat. By D. Braden Kyle, M.D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College, etc. With 175 illustrations, 23 of them in colors. Philadelphia: W. B. Saunders. 1899.

Report on the Investigations into the Purification of the Ohio River Water for the Improved Water Supply of the City of Cincinnati, O. Made by the Board of Trustees, Commissioners of Water Works. Cincinnati: Commercial Gazette Job Print. 1899.

Hand-book of Physiology. By W. Morrant Baker, F.R.C.S., and Vincent Dormer Harris, M.D. (Lond.), F.R.C.P. Fifteenth American edition. Revised by Warren Coleman, M.D., and Charles L. Dana, A.M., M.D. Illustrated. New York: William Wood & Co. 1899.

Hand-book of Optics for Students of Ophthalmology. By William Norwood Suter, B.A., M.D., Professor of Ophthalmology, National University, and Assistant Surgeon, Episcopal Eye, Ear and Throat Hospital, Washington, D. C. New York: The Macmillan Co. 1899.

A Compend of the Practice of Medicine. By D. E. Hughes, M.D., Chief Resident Physician, Philadelphia Hospital. Sixth physicians' edition, including a Section on Mental Diseases and a very complete Section on Skin Diseases. Philadelphia: P. Blakiston, Son & Co. 1899.

Interstitial Gingivitis, or So-called Pyorrhœa Alveolaris. By Eugene S. Talbot, M.D., D.D.S., Professor of Dental and Aural Surgery, Northwestern University, Woman's Medical School, etc. With 73 illustrations. Philadelphia: The S. S. White Dental Manufacturing Co. 1899.

The Cerebro-spinal Fluid: Its Spontaneous Escape from the Nose, with Observations on its Composition and Function in the Human Subject. By St. Clair Thomson, M.D., M.R.C.P. (Lond.), F.R.C.S. (Eng.). London, Paris, New York and Melbourne: Cassell & Co., Limited. 1899.

A Class Book of Elementary Practical Physiology, including Histology, Chemical and Experimental Physiology. By De Burgh Birch, M.D., C.M., F.R.S.E., Professor of Physiology in the Yorkshire College of the Victoria University, etc. Philadelphia: P. Blakiston, Son & Co. 1899.

On Fractures and Dislocations. By Prof. Dr. H. Helferich, of Griefswald. Illustrated with 68 plates and 126 figures in the text, drawn by B. Keilitz. Translated from the third edition by J. Hutchinson, Jr., F.R.C.S., Surgeon to the London Hospital. New York: William Wood & Co. 1899.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, A.M., M.D., Clinical Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City, etc. Illustrated with 92 engravings and two colored plates. New York and Philadelphia: Lea Brothers & Co. 1899.

Original Articles.

AN OBJECT LESSON IN MILITARY SANITATION.[1]

BY CHAS. R. GREENLEAF, M.D.,
Colonel, Medical Inspector, United States Army.

THE military camps that are now, and have been, located on the outskirts of the city of San Francisco, present an object lesson in sanitation that is interesting and striking.

These camps, located within a couple of miles of each other, nearly equal in the number of men they contained (about 12,000), have been subjected to identical conditions as to climate, soil, water supply, food, etc. In one, Camp Merritt, the men were scourged with sickness and death and large numbers of them were permanently invalided; local epidemics became general and soon the entire camp was so thoroughly infected that it was of necessity abandoned.

In the other camp, at the Presidio, there has been but little sickness (the percentage never exceeding five and a half to the aggregate strength), few deaths and a few cases permanently invalided; local epidemics of contagious disease, due to importation, have been quickly controlled and have not in any case extended beyond the respective commands which brought them, nor up to this date has a single case of infectious disease originated in the camps. Quite naturally, the question has been asked, "Why is there this difference in the health conditions between the two camps?" The answer is simple: At Camp Merritt the advice of sanitarians was seldom asked, and when asked was not followed, and nearly every law of health was either ignored or violated.

At the Presidio the advice of sanitarians was freely sought, accepted and carried out, no pains being spared to secure as far as possible compliance with the laws of health. Officers and men alike appear to have recognized the benefits of sanitation and have been not only willing to accept the advice of its teachers, but ready to carry out that advice to its fullest extent; and here I wish to bear willing testimony to the valuable assistance that has been rendered by General Shafter in the work, which without his co-operation could not have been successful; he has taken a personal interest in its details, approved without hesitation the various measures that have been laid before him, encouraged the workers and through his knowledge of existing military conditions in this section has made practical suggestions that have been of the greatest value; as sanitarians we certainly owe him a debt of gratitude.

The object in establishing these camps was to shelter and care for the State volunteers returning from the Philippine Islands to be mustered out of the service of the United States, and for the recruits and new volunteer regiments gathered from all parts of the United States and sent to San Francisco for transportation to the Philippines. The problem to be solved in their sanitation was a complicated one, since the methods to be decided upon must apply to organizations coming from opposite parts of the world, where climatic and other influences were known to induce a variety of conditions that could render the men from both ends of the line liable to disease.

[1] An address delivered before the San Francisco County Medical Society, San Francisco, Cal.

The men of the incoming regiments were assumed to be physically below par after a year's campaigning in the tropics, and therefore peculiarly liable to pulmonary disorders from the radical change of climate, or to intestinal diseases from tropical infection, or from dietetic indiscretions after arrival, since, in its outburst of patriotism, San Francisco held an "open door" for these returned heroes to its stores of both solid and liquid food; the infectious diseases of the tropics, bubonic plague, etc., were liable of importation, and in the indifference of the returned soldier to any care of self, there was good ground for apprehension as to his health.

The men of the outgoing regiments, being recruits, were considered as especially liable to disease, since it is a well-known fact that few of this class escape a visit to the doctor before the end of their first six weeks of service by reason of the change in their environment and habits of life; they are, moreover, to a greater or less extent, carriers of infectious disease, usually contracted at home, which unless closely watched will soon contaminate a camp.

The location of the camp was by no means a desirable one; the soil was retentive, the terrain broken and hilly, the climate very trying, high winds and heavy fogs being of daily occurrence, while the water supply was not much more than sufficient to meet the requirements of the ordinary garrison.

The advantages of the military situation, in an organized plant, with abundant supplies, ample transportation and the proximity of a large and prosperous city, were so great that it was determined to overcome the difficulties that were presented and by a little extra exertion and care make the camps thoroughly healthy and convert them into models of successful sanitation; three separate camps were accordingly planned for the Presidio Reservation and one (a detention camp) for Angel Island in the bay. The first was the model camp, to accommodate five regiments of returning volunteers, about 5,000 men; the next was the volunteer camp, to accommodate four regiments of outgoing volunteers, about 5,200 men, and the third, a recruit camp, for about 2,000 recruits, to fill the regular regiments already in the Philippines. The detention camp was made for about 1,500 men.

In planning these camps the primary objects were to remove the kitchens as far as possible from the latrines, to provide a safe method for the disposal of excreta, garbage, etc., to secure means for the personal cleanliness of the men, to heat their quarters and to supply them with an abundance of good food and water.

The model camp was laid out in two sections, one for three regiments, the other for two, each in the form of a parallelogram, the central line of which was occupied by wooden sheds for the kitchens and mess halls; opposite each end of these buildings a row of Sibley tents (floored) was pitched, and on the flanks and rear the latrines and bathhouses were placed; an emergency hospital, to accommodate six beds, and a small dispensary was provided on the staff line of each regiment; a zinc-lined wash trough supplied with a dozen bib cocks was placed in the rear of each mess hall, to be used as a lavatory; a grease trap, connected with a sewer for liquid garbage, was placed near the door of each kitchen, and galvanized-iron garbage and ash cans were placed on the porch. Stoves were set up in every tent and in the mess halls; these buildings, when not in use for meals, being occupied as gath-

ering places — social halls — for the men. In the volunteer and recruit camps the same general plan was followed, the relative positions of the kitchens and latrines being changed owing to the hilly and broken lay of the land. Large caldrons were set up at convenient places in the camp, for heating water that might be used either to disinfect any fabrics, or to furnish hot water for laundry purposes; galvanized-iron wash tubs in the proportion of two to each company were furnished, and night-soil tubs were placed in every company street at "tattoo" for the use of the men during the night, a sentinel being posted in the street to see that the orders regarding their use were carried out. The water supply was increased by a connection with the city mains, and an abundance of water secured for all purposes.

The detention camp on Angel Island was provided for the shelter of any troops that might have to be placed in quarantine, by reason of infectious disease on the transport that brought them from Manila. It was pitched in two equal sections separated from each other by a wide street, in the centre of which a double line of barbed-wire fence, of eight strands high, was placed, the interval between the fences serving as a beat for sentinels. The object of this division was to enable either of two commands that might be quarantined on different dates to complete its period of detention without interfering with the other.

Arrangements were made for a careful inspection of all incoming transports and for the immediate segregation of any sick that might be among the soldier passengers, and before fresh troops were embarked the transports were disinfected.

The railway service was also considered, and arrangements made for the daily cleansing and disinfection of water closets and urinals on all troop cars while *en route*, and for an abundant supply of drinking water for the men.

The plan of construction of the latrines and the method of disposal of excreta is that recommended by a board of medical officers composed of Major Reed, United States Army, and Majors Vaughan and Shakespeare, United States Volunteers, and is described in the following extracts from its report:

A trough made of No. 22 galvanized iron, fourteen feet long, twenty-two inches wide at the top, parabolic in cross section, and with a maximum depth of eighteen inches, if set in a light wooden framework, which serves as a protective crate in transportation, gives support to the trough while in position, and serves for the attachment of a lid in two sections, furnished with seven seat holes. These holes are shaped so as to render soiling of the seat difficult, and a slanting board one foot wide permanently fixed at a proper angle above the seat prevents the men from getting up on it with their feet. When in position one end of the trough is raised four inches higher than the other. The trough is placed in an ordinary frame privy house. At the upper end of the trough there is placed a galvanized-iron gutter of proper height and inclination leading into the trough to serve as a urinal. The rear side of the gutter or that attached to the wall of the building is higher than the front side, to prevent soiling the building. The trough is prepared for the reception of fecal matter by filling it with water until a certain level indicated by a line on the inside of the trough is reached. A measure for the purpose, and holding one-sixth of a barrel, is now filled with quicklime and emptied into the water; some dry lime should also be placed in the urinal. The lime in the trough is thoroughly stirred with a wooden paddle. This stirring is repeated three times every day. The wooden paddle when not in use stands in a pail filled with milk of lime. Toilet paper is provided for the men's use in the latrines, because large pieces of newspaper will float on the water holding masses of fecal matter above the surface, thus exposing it to the flies and other insects.

Once a day the contents of these troughs are pumped out into an odorless excavator, carted away and properly disposed of. The milk of lime destroys the typhoid bacillus, and the contents of the trough, if properly cared for, will be quite innocuous. Not only is the milk of lime and fecal matter innocuous but its value as a fertilizer is considerable.

Our experience during the war has demonstrated the fact that the untrained soldier cannot be depended upon for thoroughly cleansing a camp, or for properly removing and disposing of excreta; a corps of civilian scavengers was therefore employed to perform this important duty; it consisted of two overseers, twenty-two night scavengers, fifty-four day scavengers, and seventeen teamsters, who used in their work five odorless excavating carts, six sanitary cars, and twelve dust carts. This force emptied the latrine troughs twice in twenty-four hours, and twice daily removed all garbage, ashes, and camp waste from the camp and its vicinity; the soldiers kept their tent floors, kitchens and mess halls and company streets swept clean twice daily, and one man from each company was on duty each day in the company latrine to keep it clean and stir the lime solution frequently.

A medical officer of the regular army was detailed as inspector of each camp, whose duty it was to visit the various regiments, and to see that the tents, kitchens, latrines, bathhouses, etc., were kept clean and that the food was of proper quality and quantity and well cooked.

Immediately upon the arrival of a regiment in camp, the inspector had its emergency hospital fully equipped, and gave orders that any temperature cases that might be found at sick call should be at once admitted, and a blood examination made, to determine if possible the diagnosis; if the fever continued beyond twenty-four hours, the case was to be sent to the General Hospital, located on the reservation and close to the camps, where it was kept until the character of the disease was determined and its treatment carried to its termination. The object of this procedure was to separate from the regiment, at the earliest possible moment, all cases that might prove to be of an infectious nature. Shortly after the volunteer troops arrived, some cases of small-pox developed in one of the regiments, and thereafter all incoming regiments were at once revaccinated, the operation being repeated every five days on unsuccessful cases until a success was obtained, or the individual was, in the opinion of the medical officer, immune.

The following sanitary regulations were published for the government of the camps, a copy being given to each colonel and to each surgeon immediately after arrival.

The commanding officer of the troops occupying the camps will detail from his command two sanitary inspectors; one from the line, preferably a major of the

regiment, and the other a regimental medical officer, whose daily duty it shall be to jointly inspect the regiment, inquiring into the general police of the company quarters and streets, the kitchens, the food, its preparation, quality and method of serving, the latrines, urinals and sewers, and making to the regimental commander a brief report of any unsanitary conditions they may discover, this report to be forwarded the same day to the medical inspector of the army at department headquarters.

One medical officer and one hospital steward from each regiment will be required to be present for duty with the regiment at all times of the day and night.

A daily sick call will be held and slight cases of illness treated in quarters or in the regimental hospitals provided for that purpose, but all men who are likely to remain sick more than three days will be promptly sent to the General Hospital at the Presidio of San Francisco.

If any case of infectious disease occurs, the fact will be promptly reported to the camp surgeon, who is authorized to make the proper disposition for its isolation and care.

An ambulance fully equipped with a team will be assigned to the camp by the commanding officer of the Presidio. This ambulance will report daily to the camp surgeon at sick call, remaining in the camp during the day, subject to his orders. Under no circumstance will this ambulance be used for any other purpose than the transportation of the sick, or medical supplies. The commanding officer of the Presidio will also cause another ambulance to be sent to the camp for service at night time. This ambulance will remain on duty from retreat to reveille for night emergency service. When the night ambulance reports for duty, the day ambulance will be relieved and returned to the post.

Company commanders will caution their men against exposure to the fogs and high winds that prevail here, especially in the early morning and evening, at which times overcoats will be worn. Riding on the "dummy" of the street cars, especially at night, is particularly hazardous to men recently returned from service in the tropics. Guard duty and other military functions required at these hours will be held in overcoats, and at breakfast and supper the stoves in the dining-rooms will be provided with fires. The sale, by civilians, of food or drink within the limits of the camp will be forbidden.

At retreat, urine tubs, two to each company, will be placed in each company street, and men desiring to urinate at any time during the night will be required to use them. The tubs will be removed from the company street at reveille to a place convenient for the scavengers, who will remove, clean and place lime in them for use the next night.

The quartermaster's department will be required to provide an ample force of scavengers to clean the latrines and urinal troughs at least once daily, and to refill the troughs with milk of lime; they will also remove all kitchen garbage, and either cremate it or dispose of it in such safe place as the quartermaster shall direct. Particular care will be enjoined on company cooks to keep grease traps clean, and to deposit all solid garbage in cans prepared for that purpose in time for its removal by the scavengers.

The quartermaster's department will furnish to each regiment an ample supply of necessary policing implements to enable the men to thoroughly and effectively police the camp daily.

In addition to the inspections required in the above order, the camps were visited daily by the writer, who found that as a rule the regulations were properly carried out by officers and men.

Nearly every body of troops brought with it some form of infectious or contagious disease; typhoid fever, tropical dysentery, diphtheria, small-pox, measles and mumps appeared as constant importations; the cases were, however, promptly segregated from the command, all infected material was disinfected or destroyed, men who had been exposed to the contagion were isolated and quarantined, and in the case of small-pox everybody was vaccinated. Not a single case of any infectious or contagious disease has originated in the camps. Recommendation was made to the Washington authorities to detain all outgoing troops in these camps for a sufficient time to cover the ordinary incubative period of these diseases and eliminate all suspects before embarkation on transports, but it was not deemed advisable to carry sanitary precautions that far.

The length of this address precludes comment, which indeed seems unnecessary, since the facts speak so plainly for the benefits of thoroughly digested sanitary precautions when conscientiously and faithfully carried out.

TENTAGE FOR TROPICAL SERVICE.

BY EDWARD L. MUNSON, M.A., M.D.,
Captain and Assistant Surgeon, United States Army, Washington Barracks, D.C.

With the military occupancy of our new island acquisitions the unsuitability for tropical climates of our regulation tentage — particularly that used for the shelter of the sick — became at once apparent. While not seriously defective when used under the conditions of weather and temperature for which they were originally designed, the several types of tent used in our service are all intensely hot and close under the vertical sun and in the humid atmosphere of the tropics. With reference to the hospital tent these undesirable qualities appeared to be presumably due:

(1) To the impingement of the direct solar rays upon the single thickness of canvas of the walls and ends.

(2) To the insufficient air space and limited opportunity for the movement of air between the fly and roof of the tent.

(3) To the inadequate size and improper location of the openings for ventilation.

After some consideration the writer, some months since, suggested the following changes in the regulation hospital tent, which, it was believed, would materially improve the latter for service in the Torrid Zone:

(1) That the tent fly be enlarged two feet in length and four feet in width.

(2) That this fly be raised upon a light false ridge placed one foot above the true ridge; this false ridge being four feet longer than the true ridge and projecting two feet to the front and rear. This is held in place by increasing by one foot the length of the present pins in the tent uprights and inserting these into suitably located sockets, metal lined to prevent

splitting, in the false ridge. For convenience of transportation the latter is sawn obliquely through the centre and the ends enclosed in a heavy galvanized iron box to form a joint. Small iron pins at each end pass through suitably located eyelet holes to hold the fly in position; while one end of the false ridge in each tent is provided with a locking arrangement by which several tents may be joined firmly together to form a ward.

(3) That the canvas comprising the top of the tent be cut out for a space two feet wide on each side of the ridge and running the entire length of the tent except one foot, front and rear. The canvas thus removed is replaced by heavy rope netting, having a mesh about two inches square.

(4) That the tent fly be made of white canvas to better reflect the heat rays, while the tent itself is of dark canvas, to properly subdue the light in the interior.

The above changes theoretically ensured complete protection of the walls — and nearly so of the ends — from the rays of the sun; a large free space, at least one foot wide, between the tent roof and fly, from which the heated air could be readily driven by per-



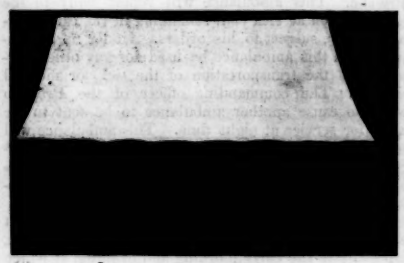
Front view of tent showing lateral overhang of fly and large air space between roof and fly. (Regulation hospital tent in background.)

flation, and, finally, complete ridge ventilation of the tent itself, rendering the stagnation of heated or impure air impossible. As at present arranged this tent has forty-eight square feet of ventilating surface where the regulation tent has less than two-thirds of one square foot; and currents of air passing horizontally over the netting under the fly exert a direct aspiratory effect on the air within the tent itself. The two-foot overhang of the fly, front and rear, implies the pitching of the hospital ward in tent sections four feet apart; the sheltered intervening spaces allowing free lateral ventilation, the complete isolation of patients attacked with contagious diseases, as yellow fever or small-pox, direct entrance and egress of the inmates, and furnishing a covered area for the protection of ward property. When tents are pitched together the two flies are prevented from gaping by being made slightly wider at the base than the centre and thus readily overlap through the proper location and traction of the corner guy ropes.

Through the kindness of the surgeon-general, a tent made on the above plan was recently received at Washington Barracks for experimental purposes. For comparison it was pitched within a few feet of a regulation hospital tent and also the regulation conical wall tent of the latest model. A thermometer was suspended in the centre of each tent about four feet from the ground; and, for better comparison, one was also placed in the dense shade given by nearby foliage, while another was exposed in the open air to the direct rays of the sun. The several temperatures were taken hourly during the heated parts of the day and were noted as follows:

Date.	Hour.	In the sun.	In the shade.	Imp. hosp. tent.	Reg. hosp. tent.	New model conical wall tent.	Remarks.
Sept. 7th.	1	87°	79½°	84°	89°	93½°	Walls down.
	2	94°	80½°	86°	94½°	100°	" "
	3	90°	83°	86°	93°	97°	" "
Sept. 8th.	11	95°	84°	89½°	99°	107°	" "
	12	97°	86°	92°	97½°	104½°	" "
	1	103½°	84½°	90½°	96°	98°	Walls rolled up.
	2	104½°	93°	90°	94°	93½°	Thermometer 2 feet above level of wall.
	3	93°	88°	89°	92°	91½°	

These figures show a temperature in the improved hospital tent, with walls down, never more than 5½° higher than that in the open air and the densest shade



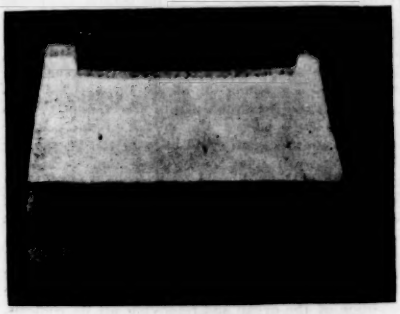
Side view of tent showing overhang of fly, front and rear and color combination.

available, and once only 3° higher. As compared with the regulation hospital tent, with walls down, the temperature of the improved tent averaged (five readings made during two days) 87.5° for the latter and 94.5° for the former — an average difference of 7°. The improved tent was never less than 4½° cooler and twice was 8½° cooler. On one occasion subsequently a difference of 10½° was noted. As compared with the conical wall tent the temperature ranged from 9½° to 18½° lower in the improved tent. Such a divergence of temperature means in the tropics all the difference between comfort and distress for the well and such relief from great and depressing heat as would do much to bring about recovery in the sick. It was noted that the improved tent cooled down when, for instance, the sun was obscured by clouds, much more rapidly than did the old style tents. The latter absorbed and apparently imprisoned the solar heat, so that frequently the thermometer on the inside of the closed tent was considerably higher than the one outside exposed to the direct solar rays. Such an obviously undesirable condition of affairs was never even approached in the improved tent.

While the rolling up of the tent walls in the regulation tentage considerably lowers the inside temperature,

the ventilation of the improved tent is so complete that such action lowers the thermometer no more than 2° or 3° at most; so that the sick can be kept in the subdued light and comparative quiet and seclusion of the closed tent without discomfort or depressing effects. This is of particular importance in the treatment of such affections as typhoid fever, where glaring light and outside sights and sounds are a constant source of irritation. By this means also the annoyance from flies — the bane of camps in warm weather — is largely avoided. With tent walls fully rolled up the temperature of the improved tent ranges from 3° to 6° lower than in the regulation tent — about the same difference also existing between the former and conical wall tent.

The principles as outlined for the case of the hospital tent may also be applied to the officers' wall tent and would certainly conduce much to the comfort of the inmates during warm weather. In order that such a tent might be still available for use in cold weather within the United States it is merely required to issue the present size fly, put it on over the true ridge and



Side view of tent, fly thrown back, showing false ridge and ventilating space.

peg it down so as to lie flat on the canvas roof and thus close the ventilating opening, either with or without the use of the false ridge and larger fly; or the tent might be issued with a separate ridge-cap of canvas, extending several inches below the lower border of the netting. Such a ridge-cap could readily and securely be fastened in place by means of grommets and eyelets when required.

The old style conical wall or modified Sibley tent already possesses excellent ventilation through the opening at the apex. It lacks, however, a fly; and no tent should be issued for use in the tropics without such additional protection. Such a fly could be made in the form of a truncated cone, having a diameter at base and apex two feet greater than that of the tent, and could be supported from a large ring and the centre pole, the same as is the tent itself. The length should, of course, be a trifle greater than the canvas of the present tent, exclusive of its wall. The addition of such a fly entails but little extra expense and would require absolutely no changes in the tent as now supplied. The maintenance of comfort, and hence efficiency, of the command necessitates the issue of such additional protection.

The common wall tent, on account of its size and lack of fly, is totally unsuited for use in the tropics; and this cannot be too strongly impressed upon those in authority who, lacking experience in its use under such conditions, still insist upon its employment. Troops who are to live under canvas in the low latitudes should only be quartered in the improved hospital tent or in the conical wall tent provided with a fly as suggested above — a fact appreciated as regards the sick by the United States Army Board of Equipment in its prompt adoption for the military service of the improved hospital tent as just described.

THE TREATMENT OF POST-PARTUM HEMORRHAGE.[1]

BY J. E. CURRIE, M.D., L.M., PH.D., CAMBRIDGE, MASS.

The only excuse I can offer for bringing before you a subject concerning which but very little that is either new or original can be said and respecting which I cannot claim to have any special knowledge, is its extreme and very general importance. It is of extreme importance inasmuch as in pronounced cases the life of the patient depends almost wholly upon the means resorted to for relief within a very few moments. In addition to this, it may be said that the sudden and unexpected loss of a patient under existing circumstances is, if possible, fraught with a greater degree of sadness than under almost any other conditions. It is of extreme importance, also, because of the necessity for immediate action in many cases. No time can be taken for determining upon a certain course of treatment and but little for exploration. Hesitation and precipitancy are alike fatal. It is of general importance, inasmuch as there are comparatively few practising physicians who are not liable to have a case of this kind to deal with at any time and of those whose practice does not expose them to this contingency, some may be called upon in case of an emergency, or they may be indirectly interested in consequence of social relations.

It is not my intention in this paper to review the numerous and widely diverse methods of treatment, which have been recommended for the relief of post-partum hemorrhage but simply to indicate that course of procedure, which, in my opinion, is most likely to ensure the best results in each case.

In cases of post-partum hemorrhage, as in all other similar instances, it is first of the greatest importance to determine, as accurately as possible, the source of the hemorrhage. In these cases there are three principal sources of the hemorrhage:

(1) Injuries to the genital tract which occur during labor.

(2) The sinuses in the lower uncontracted portion of the uterus, the fundus being firmly contracted.

(3) The uncontracted uterus as a whole.

Injuries which occur during labor, and which are recognized only after completion of labor, vary in importance from a slight rent or tear to rupture of the vagina. The most probable site of a tear is in the cervix, although it may occur at any part of the introitus or within the vagina. The bleeding from the torn vessels may be sufficient to destroy life directly or it may be only sufficient to prevent contraction, or

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the continuance of contraction, by diminishing the tone of the contractile tissue.

In every case of post-partum hemorrhage, whether apparently serious or otherwise, the condition of the uterus as to contraction should be ascertained at once. If the fundus of the uterus, as felt through the abdominal walls, is firmly contracted and the hemorrhage is profuse and persistent, it is safe to assume that the blood does not come from that portion of the uterus. It is, however, presumptive evidence that a tear has occurred at some other portion of the genital tract, the only other probable source of the hemorrhage being the sinuses in the lower uncontracted portion of the uterus. The gravity of the injury can be quite accurately estimated by the amount of shock which is at once apparent before a large amount of blood has been lost. If, under these circumstances, there is no great urgency, the patient should be placed in such a position as will enable the operator to see well and work readily. A hot-water douche should be used, and then with two fingers distending the vulva, its condition can be quickly ascertained. Tears within the vagina and in the cervix cannot always be recognized by touch and it is better not to devote too much time to exploration in this way, unless the hemorrhage is not controlled by ordinary treatment. As to treatment of these cases, it may be said, in general, that if the wound is readily recognized it is better to repair the injury at once, if possible. If the wound is deeply seated within the vaginal canal and the hemorrhage not excessive, ice or hot water may be used. Both of these agents are frequently very effectual but, in my opinion, the use of hot water is the most satisfactory. It should be used in large quantities and even if it do no good otherwise, the parts will thus be thoroughly cleansed and prepared for further treatment. If the bleeding is not checked in this way the whole internal cavity should be firmly tamponed with antiseptic or sterile gauze in such a way as to exert firm pressure upon the bleeding points. If this is not successful the probability of a cervical rent is increased. If the tampon introduced as just described fail to control the hemorrhage it should be removed at once and the bleeding points sought for. The uterus may be drawn down as near the vulva as possible and the bleeding vessels secured by ligatures, or by a ligature *en masse*. In cases of lacerated cervix it is not usually possible to properly repair the injury at this time, but if the character of the wound is such as to render it possible and the condition of the patient will permit, it should be done. However, the result in this respect is usually unsatisfactory, and the operation should be regarded as one for the purpose of securing the bleeding vessels. If the hemorrhage is excessive at the outset and from within the vaginal canal, with the fundus contracted, the whole cavity should be packed at once after using a hot-water douche.

The only remaining source of internal hemorrhage, under the conditions just described, is from the sinuses in the lower uncontracted portion of the uterus. This variety of hemorrhage may be profuse but is much more frequently slight and constant. This condition is seen most frequently following cases of placenta previa. If the hemorrhage is profuse the indication is to tampon the whole internal cavity at once, after thorough irrigation with hot water and in all cases, when hemorrhage, whether profuse or otherwise, follows a case of placenta previa, the same course should be pursued. This variety of hemorrhage is almost certain to be constant, even if not profuse and under the circumstances the loss of even a small amount of blood is important, so it is best to stop the flow as well as the probability of its recurrence at once.

A much more frequent variety of post-partum hemorrhage than that already referred to, is that caused by failure of the uterus to contract after the completion of labor. This failure to contract is usually due to atony of the uterine muscles and the object of treatment should be to overcome this condition and cause contraction. The treatment of these cases must, of necessity, vary with the gravity of the case. If the flow is not great and danger to the patient not imminent, compression of the uterus through the abdominal walls will frequently cause it to contract and check the hemorrhage. The uterus should be grasped within the hand as soon as it can be distinguished and squeezed tightly or kneaded. Simple pressure upon the uterus is of no service in causing contraction. Bimanual compression is still more efficient, the mere introduction of the hand into the uterus sometimes acting as a stimulus to contraction. This proceeding, however, is still more effectual when with one hand grasping the uterus through the abdominal walls and the other within the vagina, two fingers are placed behind the cervix in the posterior cul-de-sac and the cervix and body of the uterus bent sharply forward upon each other and pressed as tightly together as possible. If these means check the hemorrhage the compression should be continued until the uterus is felt to contract firmly and remain so. The pressure may then be gradually relaxed, noting the effect of doing so. If the hemorrhage is not checked the hand should be introduced into the uterus and should be withdrawn after ascertaining the condition of the organ and removing all its contents. A large intra-uterine injection of hot water should then be used. The water should be as hot as can be borne, certainly not less than 105° F., should be used very freely and if possible, should be introduced by force of gravitation. However, any ordinary rubber syringe will answer the purpose and will produce no ill effect if properly used. The use of hot water is grateful to the patient, stimulates rather than depresses and is effectual in almost all cases. If, however, it fail to produce a good effect, common vinegar or acetic acid may be tried. Acetic acid may be added to hot water in the proportion of about one ounce to the quart and used in the same way as hot water. This remedy frequently causes immediate contraction of the uterus where other means have failed. Other remedies which are also useful when used in the same way are tincture of iodine, whiskey, etc. Any of these remedies may be tried as convenience and necessity may determine. The use of vinegar possesses the advantage of being readily obtained under almost all circumstances, of being ready for immediate use, being very effectual and not producing any ill after-effects. In order to use vinegar, saturate any clean material, sponge, a handkerchief, cotton, etc., with it, enclose this within the hand and carry the hand well up into the uterus. Then upon closing the hand the vinegar spreads over the sides of the uterus and the effect is "frequently very prompt and satisfac-

tory." The introduction of pieces of ice into the uterus sometimes has an excellent effect. The objection to its use is that it is not comfortable, that contraction is not permanent unless its use is continued for some time and that it tends to still further depress the patient. Compression of the abdominal aorta may be tried also but should not be wholly relied upon even for a short time. The objection to its use is, that it is difficult to continue sufficiently long to be of much service without assistance and that the uterine blood supply is not thus wholly cut off. It is, however, undoubtedly useful in preventing rapid exhaustion of the patient and anemia of the brain and should be resorted to, if necessary, in connection with other treatment. In most instances, compression of the aorta can be made most effectually through the abdominal walls and in this way it need not interfere with other treatment. If the bleeding still continue tampons should then be used.

If the hemorrhage is very profuse at the outset and danger to the patient is imminent, as is usually the case when atony of the uterus exists, the uterine and vaginal cavities should be firmly tamponed at once. Under these circumstances there is no time to make a very careful examination or to observe the effect of other remedies. Nothing but immediate mechanical arrest of the flow of blood can save the patient's life. The hand should be carried rapidly into the uterus to ascertain the existence of any morbid condition of that organ and to remove any pieces of placenta, clots or *débris* that may be present. The cavity should then be cleansed with a hot-water douche, the parts exposed, and the cervix drawn well down to the vulva by means of a blunt volsellum; then with one hand holding the fundus of the uterus, if it can be distinguished, the whole cavity should be securely packed, leaving the end or ends of the material used protruding to facilitate removal. The vagina should be packed in the same manner, keeping the material well up against the uterus. This adds very much to the security and efficacy of the uterine tampon. The best material for packing the uterus is iodoform or other variety of antiseptic gauze. However, in case of an emergency, any clean material, handkerchiefs, strips of cotton, etc., may be used. The tampon should be left twenty-four hours, if it check the hemorrhage or until it is expelled or uterine contraction is established for some time. After its removal the uterine cavity should be thoroughly washed out, especially if any material not known to be aseptic has been used. In the event of not having the necessary instruments or of not being able to use them from any cause, it is quite possible to tampon the uterus securely by making pressure upon the abdomen with one hand and using the other to carry the material up into the cavity; with the two hands thus in apposition the uterus can be completely filled and the tampon pressed against the bleeding surfaces.

If the bleeding continue, either the tampon is improperly placed or there exists some morbid condition of the uterus, "benign or malignant, which has been compressed during gestation and torn during labor." In the event of failure the possible existence of this condition should not be forgotten, but even so the tampon is still the best method of treatment, In this event the first portion of the tampon introduced might be saturated with some form of styptic, such as iron solution or tincture iodine. Should the bleeding still continue, in all probability an atheromatous condition of the vessels exists. I have never seen a case of this kind but the treatment recommended is to make firm pressure upon the fundus of the uterus and to so evert the organ in the vagina that the bleeding vessels may be caught and secured or a portion of the uterus bound by an india-rubber band, so as to cut off the circulation, as recommended by Kocks. The whole may then be fastened by a gauze bandage and retained for six hours. Undoubtedly ligature of the vessels is the most desirable, if possible.

Another very rare accidental cause of post-partum hemorrhage, to which reference has not been made, is acute inversion of the uterus. This condition occurs but once in 200,000 labors; still, the possibility of its occurrence should not be forgotten. The greater the laxity of the uterus the more likelihood of its occurrence. It is sometimes the result of a forcible effort of the uterus to expel the placenta and under these circumstances its occurrence might be suspected. In any case, examination readily reveals the existing condition. The indication is, to remove any attached pieces of placenta or adherent *débris* and restore the organ to its normal position as quickly as possible.

There are but few drugs which, in my opinion, have any influence in controlling the hemorrhage; of these morphine is the most useful, and should be given subcutaneously in a one-quarter-grain dose at the earliest possible moment. I have never seen a case in which contraction did not ensue as soon as the action of the morphia was recognized. The difficulty is that if nothing else is done in the interval, the patient will not live until the morphia is absorbed. This should be followed by a full dose of ergotine or ergotinol, given subcutaneously also and, if possible, the solution of ergotine should be freshly prepared and made with pure water.

A very important feature in the treatment of serious cases of post-partum hemorrhage is the general care of the patient. The indication is, to prevent as well as overcome the effects of anemia of the brain and sudden exhaustion. The patient's head should be lowered and the foot of the bed raised. The limbs should be successively bandaged from the extremities upward and the bandage allowed to remain in position or a band placed about the limb before its removal. Compression of the abdominal aorta acts in the same way. If the condition of the patient is serious, alcoholic stimulants should be used freely and strychnia in moderately large doses should be given. Both should be used subcutaneously. The principal indication, however, is to fill the circulation and the heart with a large amount of saline solution at once. The best saline solution is common salt dissolved in hot water, in the proportion of one teaspoonful of salt to a quart of hot water. This should be used early, in large quantities, several quarts, if necessary and should be introduced as far up into the bowel as possible. This in most cases acts very speedily and effectually. If, however, the effect is not satisfactory, the saline solution should be used hypodermically. For use in this manner the solution should be of the strength of 0.6 per cent. The best situation for using the liquid in this way is in the loose cellular tissue of the back or chest, and the best means of using it is by the force of gravitation. In this way as much as 500 or even 1,000 grammes of liquid can be introduced into the circula-

tion very quickly, without any local effect, and it relieves the anemia almost instantly. If the effect is not satisfactory the liquid may be introduced directly into the venous circulation. This is a much more complicated and formidable proceeding and is seldom if ever necessary but if used there are a few particulars which should always be observed. The temperature of the solution should be at least 100° F. and of the same strength as in the preceding instance; it should be absolutely free from saline particles; should be introduced in a slow, steady stream; the quantity of liquid should vary with the effect produced and the needle should be introduced into the vein while the liquid is flowing.

SUMMARY.

(1) A knowledge of the source of the hemorrhage is necessary to ensure intelligent action.

(2) All rents when easy of access should be repaired at once.

(3) If the body of the uterus is contracted and bleeding excessive and in all cases of hemorrhage following placenta previa, the whole cavity should be tamponed at once.

(4) If this is not successful, or if the hemorrhage is constant and not excessive, secure the bleeding vessels and, if possible, repair the injury.

(5) If atony exist and hemorrhage not excessive, use external and bimanual compression of the uterus, followed, if necessary, by hot water, vinegar or acetic acid.

(6) If not successful or if atony exist with excessive hemorrhage from the outset, tampon at once after using hot water.

(7) Give morphia hypodermically to check the hemorrhage and stimulants, strychnia and auto-infusion to overcome the effects of the hemorrhage.

(8) To prevent anemia use saline solution, preferably per rectum or hypodermically. May use saline solution by infusion also, if necessary.

THE VALUE OF UROTROPIN IN THE TREATMENT OF CERTAIN FORMS OF GENITO-URINARY DISEASE.

BY J. M. THOMPSON, A.B., M.D., BOSTON.

WERE it essential to the purpose of this paper to take up the matter of indiscriminate sampling that has obtained in this country for some time past in respect of remedial agents of every conceivable kind and description, it is quite safe to assume that the subject would not be altogether ill chosen or untimely. And, yet, irrelevant though it would be in this connection, one cannot forbear hinting at the practical effect this deplorable custom has wrought not only in the past, but especially at the effect it is likely to have in the future; for it is very apparent that the practice has made many practitioners skeptical of, or doggedly opposed to, all new remedies — at least till weighed in the balance, so to say, and found not wanting. On the other hand, while judicious skepticism in regard to new remedies is not to be strenuously opposed, still, in the light of past experience, it is evident that one cannot well afford to ignore all "new comers," either on principle, or as a matter of routine.

When Lister laid the foundation stone of modern surgery about the beginning of the last quarter century, the classification of disease no longer remained in doubt; materia medica was placed on a rational basis; encouragement was given to original investigation and research, while empirical medicine was put to flight to clear the way for the dawn of the golden era of therapy.

The therapeutic advances of the last decade have been unmistakably marked and of material importance; and with pathology, as well as bacteriology, to determine and guide her course, the therapy of the future should be no less secure than sufficient, while there need be no fear that the pharmacopeia will remain the *vade mecum* of the physician, and the dispensatory continue to serve as a book of reference.

That the world in general and the medical profession in particular owe Germany a debt of gratitude — inestimable and irremunerable — one must needs simply recall some of the recent additions to materia medica, such as sulphonal, trional, dermatol, salol, salophen, ichthyol, and the coal-tar derivatives — all indispensable and forming a nearly complete armamentarium in themselves.

Without detracting in the least from the importance of the drugs above mentioned, it is not extravagant to say that urotropin, which forms the subject of this paper, is second to none of them in point of therapeutic value. But in view of its present limited field of action, it is to be feared that it will not become widely known for some considerable time.

During the comparatively short period that urotropin has been employed in this country, several interesting and valuable contributions have been made to medical literature relative to this new remedy, noticeably by writers whose investigations have been in the direction of renal and vesical disease.

The action of this drug in some forms of genito-urinary disease, it would appear, is but little known as yet, and since it has been the writer's lot to have observed its action in certain lesions peculiar to the urinary, but more especially to the sexual, organs, it is hoped that what this report lacks in point of interest it may lend in point of encouragement to those who, in similar cases, would try the virtues of a remedy reliable and wondrous enough in its therapeutic effects to make it a veritable specific.

In truth, so much has been written and published from time to time in the medical press relative to the history of urotropin in its various phases, that even the chemistry or physiology of the drug in this connection would prove redundant and suggestive of plagiarism. In recognition, however, of the services of Prof. Arthur Nicolaier, M.D., of Göttingen, the discoverer of urotropin, it is only right and just that his name should be recalled.

Inasmuch as it does not act in the bladder by killing micro-organisms, but rather prevents their growth or bacterial development, urotropin is not a true germicide, but a *sterilizer* and *antiseptic;* it renders a foul-smelling, alkaline urine sweet and acid, and is therefore an *acidifier*. In the light of these facts, it is natural to infer that formaldehyde is separated from it to a certain degree after it passes into the bladder.

Every physician knows how common it is to find the bladder to a greater or less extent involved whenever there is a pathological process at work in any part of the male sexual apparatus; also how often vesical derangements follow hypertrophied prostate

and chronic seminal vesiculitis in cases of sexual impairment. In the face of these facts, then, after recalling how urgently patients thus afflicted seek one's advice for relief, surely it is consoling to know that at last a remedy is at our disposal that will satisfy all indications. That urotropin in such conditions is the one remedy *par excellence*, all who have employed it are ready to testify cheerfully and emphatically.

There is no doubt that there are some physicians who, when they find it necessary to prescribe a urinary sterilizer or antiseptic, true to the old adage, prefer to "let well enough alone"; while others, accustomed to deal with a new drug as a prominent American writer would have us deal with a new book, — not to recognize it till it be at least one year old, — specify salol, oil of wintergreen, salicylic acid, benzoate of sodium. To such as put faith in these as sterilizers, let me remind them that, after using salol for eight years, invariably with satisfaction, I felt compelled to consider a substitute, for the reason that one patient who had been taking five-grain doses three times a day for gleet from urethral granulations, in conjunction with steel sounds, reported carbolic-acid poisoning. Nothing further was done than to withdraw the salol, and my trouble ceased; but only for a short time, for another patient, who had been using the drug while having sounds passed, took occasion to be examined for life insurance, and, although strong and robust, he was rejected on the ground of albuminuria. After reporting the fact, the salol was stopped and the albumin disappeared in forty-eight hours. Urotropin was obtainable at the time, and since it was purported to possess both sterilizing and antiseptic properties, there was no delay nor hesitancy in accepting its claims for trial.

From the number of patients classified under the head of genito-urinary disease, satisfactory observations on the action and effect of urotropin have been prepared in 67, principally chronic. The dose was generally 7½ grains (compressed tablet form), followed by a full tumbler of water, morning and evening; at times, in the more severe cases, and especially following an acute exacerbation, a third dose of 7½ grains was ordered at noonday or at bedtime. With but few exceptions the physiological effect was apparent in from twenty-four to forty-eight hours, when, upon examination, the urine was found to be sweet smelling and transparent to a varying degree. Patients reported neither difficulty in, nor antipathy to, taking the drug as ordered, while on the digestive and renal apparatus, heart, nervous system and other parts of the animal economy, the effect was negative.

Thus far in the writer's personal experience, urotropin has had the most noticeable and salutary effect in chronic seminal vesiculitis. As a rule, when first seen, these patients call one's attention to the urine, which is nearly always abnormal in color, high in specific gravity, and more or less turbid. A deranged nervous system is not uncommon, while the neurotic element frequently betrays itself. Such patients, too, are likely to suffer from either periodic or persistent phosphaturia, which urotropin dissipates as if by magic. The turbidity so common in these cases, whether due to the pathological deposit which escapes backward from the vesicles, or to involvement of the prostate (when we have what is known as "prostatorrhea"), to a catarrhal condition of the deep urethra, or to the presence of bacteria, that turbidity disappears after the administration of urotropin.

It is not uncommon to find among those who have suffered from the pangs and discomforts which only the gonococcus causes that after all symptoms have ceased for a time the discharge returns copious and free, yet unaccompanied by the other symptoms characteristic of the first stage. Naturally, such patients are likely to be extremely debilitated and nervous; their urine is either neutral or alkaline. Upon questioning them, one will discover that the treatment which they have followed included the daily use of an antacid, like bicarbonate of sodium, which, for the first few days, contributes to the patient's relief, but when continued beyond the acute stage, or rather beyond the time when such treatment is indicated, by prolonging an abnormal (alkaline) reaction of the urine, keeps such normal constituents as phosphates, carbonates, etc., in a state of precipitation, a condition that must in time act as a mechanical irritant to the urethral mucous membrane, and provokes what may be termed a "phosphatic urethritis." If urotropin be ordered in 7½-grain doses morning and evening, a most happy effect will be noticed in about forty-eight hours, and, unlike the effect produced by a mineral acid, of a permanent character.

Recently I took occasion to try urotropin in two cases — the patients aged sixty-four and fifty-seven respectively — with enlarged prostate. Both had been obliged to use a catheter for years, except at times when the symptoms abated sufficiently to enable them to void their urine naturally. At such times as the catheter was not a necessity, the urine appeared normal, beyond the presence of small flocculi and comma-shaped shreds; whenever the catheter was likely to be employed the urine took on a murky, cystitic look, and soon became alkaline and foul smelling. The usual subjective symptoms returned, and life became a real burden. Both patients were under observation at this stage, when it was expected that the catheter might be required at any moment. In order to test the virtues of urotropin, each patient was put on 7½ grains of the drug three times a day. The effect was most gratifying, for the urine cleared up rapidly, and the subjective symptoms disappeared gradually. The urine still remains in a satisfactory condition, and both patients report that urotropin has enabled them to enjoy the longest period of happiness that has fallen to their lot for years.

Apart from that irritability of the vesical neck so common to diseases of the bladder and of the deep urethra, and to those organs in close connection with them, it is not rare to find patients affected with what may be termed "idiopathic irritability." In the absence of existing disease of the bladder or of the sexual apparatus, this condition comes on suddenly. While the direct cause is obscure, one is likely to find such patients of neurotic temperament, with a tendency to the secretion of a heavy, strongly acid urine, and also to periodic attacks of hepatic congestion. They drink very sparingly of water and are wont to overlook the normal action of the other organs so vital to immunity from functional derangement. The urine in such cases does not show any material change other than turbidity and some flocculi. Albumin, when present, is rarely more than a trace, and so slight that it may be overlooked if one does not make careful tests. Granular material and bacteria, how-

ever, obtain commonly. With appropriate treatment directed to the abnormal condition of the other organs, urotropin has not even a competitor in allaying this peculiar form of irritability.

After the acute symptoms of gonorrhea (either simple or specific) have subsided, and the hyperacidity due to the excessive amount of pus passes away, it is quite essential to success to preserve the normal slightly acid reaction of the urine, which now, during the second stage, tends to become neutral or alkaline, and furthermore, too, treatment at this stage is likely to determine the future trend and character of the disease. If urotropin be prescribed the urine will retain its acid reaction, bacterial growth will be checked, and nature will in consequence find no difficulty in healing the mucous membrane.

From the foregoing it will be seen that 7½ grains morning and evening proved a sufficient dose of urotropin in the writer's experience. When a third dose seemed to be called for, it was given, and after the desired effect was produced — when the urine remained clear and sweet for a few days — the dose was reduced gradually and finally withdrawn. When first employed, previous to reducing the amount of the daily dose, a small portion of freshly voided urine was transferred to a sterilized glass-stoppered bottle, and then placed in a dark room, where the temperature was kept as equable as possible. The different specimens — twelve in all — remained sterile, sweet and transparent for periods ranging from one to three weeks. One other specimen from a neurotic patient was preserved in the same way, except that the surrounding temperature was kept at about 98.6° F. (37° C.). He had been taking 7½ grains night and morning for phosphaturia. A two-ounce specimen was prepared on January 8th. This remained perfectly clear and apparently sterile and sweet till April 13th. Two days later, April 15th, it began to get murky and emitted a slightly decomposed odor.

From the foregoing experience and observations on the therapeutic action and effect of urotropin in diseases of the genito-urinary tract, the essential points may be summarized in brief as follows:

(1) A urinary sterilizer, antiseptic and acidifier — prompt and reliable in action, — moderate in dose, which, if adhered to, renders it both non-toxic and non-irritating to all parts of the animal economy.

(2) In virtue of its peculiar affinity for the urine, into which it passes unchanged, and where it parts with formaldehyde, it is apparent that its action in genito-urinary lesions is likely to be complete and certain.

(3) Its decisive and lasting effect, and especially its comparative singleness of action — which last is a most desirable property — should give it a place in the list of medicinal specifics.

(4) From the observations reported thus far, urotropin has appeared to be most frequently indicated in chronic disease, where it has produced exceptionally good results.

(5) In the writer's personal experience the diuretic action of the drug was not marked enough to render it deserving of claim to such a virtue.

DEATH OF DR. J. E. GRAHAM. — Dr. J. E. Graham, professor of medicine in the University of Toronto, has recently died.

Clinical Department.

ACUTE HEMORRHAGIC GANGRENOUS PANCREATITIS; OPERATION ON THE SECOND AND TWENTY-EIGHTH DAYS; DEATH.

BY CHARLES L. SCUDDER, M.D., BOSTON,
Assistant in Clinical and Operative Surgery, Harvard Medical School; Surgeon to Out-Patients, Massachusetts General Hospital.

E. P. O., a man, thirty-four years old, unmarried, a bartender by occupation, had been drinking heavily for three weeks. He was awakened early one morning by great pain in the epigastrium. The pain extended to the umbilicus, from which it radiated. He vomited at short intervals. These symptoms had continued for two days, when he was brought to the Massachusetts General Hospital needing immediate attention.

The man presented the usual peritoneal or abdominal facies. There was a drawn look about the corners of the mouth. He looked tired, sick and anxious. He was vomiting every few minutes a small quantity of dark-colored fluid containing some bile but without fecal odor. There had been no dejection for three days. The temperature was 99.8° F. The pulse was 130, weak but regular. The respiration was 20. The abdomen was uniformly distended, without perceptible muscular rigidity. There was dulness in both flanks. There was no tumor or increased resistance anywhere in the abdomen. The epigastric region disclosed nothing unusual. There were no external signs of hernia. There was no leucocytosis.

Because of increasingly persistent vomiting, abdominal pain and distention, the peritoneal facies, poor pulse and absence of dejections, the abdomen was opened by an incision at the outer border of the right rectus. Dark coffee-colored fluid escaped from the general abdominal cavity. The mesentery and great omentum showed many small (the size of a millet seed and split pea), yellow areas — disseminated fat necrosis. These areas of fat necrosis increased in number up toward the posterior wall of the stomach. Soft adhesions encapsulating the same dark-colored fluid were found about the pancreas and duodenum. The gall-bladder was apparently normal. The pancreas was slightly enlarged but no fluctuating areas could be detected in it. All adhesions were broken up and the abdominal cavity was flushed with normal salt solution until the return water came clear. Gauze wicks were placed deep to the pancreas and the abdominal wound partially closed.

At the end of five days all the acute symptoms had disappeared. Twelve days after the operation there was a sudden rise of temperature which was associated with nausea and vomiting. There was a leucocytosis of 26,000. Rectal feeding was used exclusively. During the following two weeks occasional vomiting persisted (once or twice daily). The man was evidently septic. The temperature rose a little in the evening a few times. A slight increase of resistance in the epigastric region was noticeable. Because of a return of vomiting, discomfort about the epigastrium, slight rise of temperature and leucocytosis, the abdomen was opened for the second time — about four weeks after the first operation. A deep abscess cavity was found at the epigastric level extending down to and about the pancreas. The cavity was thoroughly evacuated and cleansed. A dry sponge introduced

upon long forceps and twisted about removed a black, shreddy, sloughy, soft gangrenous mass which was the greater part of the pancreas. There was considerable oozing of blood, which was checked by gauze packing. The man remained in poor condition following the operation, and two days later died. No autopsy was obtained. At no time during his illness after arrival at the hospital was there sugar in the urine.

The bacteriological examination of the fluid evacuated from the abdominal cavity at the first operation showed it to be sterile.

The bacteriological examination of the purulent material evacuated at the second operation showed the presence of the staphylococcus pyogenes aureus. These examinations were made at the Pathological Laboratory of the Massachusetts General Hospital, Dr. J. H. Wright, Director.

The initial symptoms of most acute abdominal troubles are very much alike, and in the absence of a history which might point to the seat of the lesion, no localizing diagnosis can be made. In this case the initial symptoms of pain, vomiting and collapse suggested of course an intra-abdominal lesion. To this particular group of symptoms Gübler has given the term "peritonism." These symptoms suggested more particularly some form of intestinal obstruction. The collapse in this case was less acute and less early than is usually seen in intestinal obstruction.

The pain in this case was not a colicky pain, as in intestinal obstruction; it was a more continuous oppression referred to the epigastrium.

The vomiting was continuous and began early, as in intestinal obstruction, but, unlike intestinal obstruction, it was not copious in amount. Constipation was present.

No diagnostic sign of acute hemorrhagic pancreatitis appeared previous to the first operation. The conditions found at the second operation were to be expected in the natural course of the disease.

A CASE WHICH BAFFLED DIAGNOSIS.

BY BENJ. R. SYMONDS, M.D., SALEM, MASS.

G. K., a currier by occupation, forty years of age and married, had enjoyed the best of health until two and one-half years ago, when he had an attack of pneumonia. Resolution was greatly retarded, but he eventually recovered. Since the attack of pneumonia there have been times when he seemed to suffer from temporary attacks of insanity, and he often made the remark to his wife that "some time he would be crazy." Frequently he would say that there was a "great pressure at the back of his neck," and would localize it by putting the hand directly on the occipital bone. There have been hallucinations and delusions, and his wife has spoken to friends saying that "sometimes she felt that it was not safe to live with him." In spite of these symptoms he kept faithfully at the bench, and as he worked at piece-work he favored himself if he felt so inclined.

On the morning of November 10, 1891, he said he thought he had taken cold the night before and felt rather poorly; he kept at work, however, and ate his meals regularly and apparently with relish. Next day he seemed about the same. On the following day, November 12th, he said that the pressure at the back of the neck had changed and gone to the top of the head. On the morning of November 13th he said he thought he "would stay at home that day to see if he would not feel better"; at 7 A. M. he was taken with vomiting, which persisted for three hours; nothing unusual was noted in the character of the vomitus. At times during the forenoon he was delirious, passed his urine naturally, and at noon had a natural dejection, getting in and out of bed unaided. About 12.30 P. M., his wife, having gone to an adjoining room, on returning found him in a sort of spasm; his head was thrown back, eyes rolled up, forearms and hands flexed; there was no twitching of any of the muscles of the body. She first thought he was dead, but discovered he was breathing, and then for the first time during this period sent for a physician.

I first saw him at 4.15 P. M. and found him lying in bed, in a sort of comatose state, but thought I got some recognition once or twice when directly asking him a question. There was a tendency for the arms, forearms and hands to flex; the legs were in a natural position, and he could move them in any direction; there was no paralysis of the face; pupils widely dilated and both eyes rolled upward and very strongly to the right; he was pale, and felt cold to the touch; the tongue was normal in appearance; occasionally some frothing at the mouth; at times the head was drawn back, and especially when a spasmodic contraction of the muscles took place; he was able to swallow; pulse 74, and in all respects normal. From his wife I elicited the foregoing history.

Other doctors having been sent for at the same time she sent for me, and Dr. L. G. Kemble arriving shortly afterwards, I invited him to see the patient with me. Our diagnosis was of some cerebral lesion, but just what or where we were unable to say. I ordered cold applications to the top of head, counter-irritation at the back of the neck, and gave 15 grains potass. bromidi., morph. sulph. $\frac{1}{4}$ grain, and atropiæ sulph. $\frac{1}{150}$ grain, to be frequently repeated.

Saw him again at 6.15 P. M. His condition about the same. Drew off about one pint of urine, which on examination proved to be normal. Gave him at this visit morph. sulph. $\frac{1}{4}$ grain hypodermically, which produced no amelioration of his symptoms.

At 8.15 P. M. had a consultation with Dr. D. Choate. At this visit there was a difference in his appearance, the spasmodic seizures being more frequent and violent and lasting longer, the breathing more noisy, pulse 84, the temperature 103° in the axilla. He could not be aroused. Pupils were widely dilated, not responding to light, eyes still turned to the right and up, and beginning to show signs of intense congestion of the conjunctival membrane. After carefully going through the whole case from the beginning we decided that the patient would probably die in a few hours, and that no treatment would save him, but advised bleeding him. His wife consented, and I opened a vein in the arm, from which I drew off twenty ounces of blood. This was not followed by any improvement, and he lived until 12.30 A. M., being quiet about one-half hour before death.

Autopsy at 9 A. M., November 15th, revealed nothing but a congestion of the pia mater, the vessels in the meshes of that membrane being very much engorged with blood; nothing else of an abnormal or pathological character was found; the thorax and abdomen were not opened.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

FINSEN'S PHOTOTHERAPY.

THE treatment of skin diseases by concentrated rays of light is one of the most novel advances in therapeutics in the last few years. Finsen [1] began this method of treatment in cases of small-pox, but more recently has applied it to lupus vulgaris and similar affections. Small-pox patients have been surrounded with red objects and wrapped in red coverings for centuries, but this unique mode of treatment has been looked upon as a medieval superstition. While Finsen was engaged in studying the effect of light upon the skin, some old reports came to his attention in which favorable results were reported when patients with variola were treated in darkened rooms. Experience coincides with these old observations, for the pock marks are thickest on those parts of the body most exposed to the light. In calling attention to this old therapeutic measure, Finsen suggested the exclusion of the chemical rays of the light by means of red curtains or glass instead of leaving the patients in total darkness. Various observers followed his advice and published accounts of cases which completely escaped disfigurement by this means. The theory of the treatment is as follows: It is a well-known fact that sunlight can produce an irritation of the skin varying in intensity from a slight erythema to the formation of vesicles and desquamation. This was formerly believed to be due to the heat rays, and the erythema consequently took the name of erythema caloricum. But recent investigations have shown that the inflammation is not due to the ultra-red, red and yellow (or heat) rays of the light, but to the blue, violet and ultra-violet (or chemical) rays. Erythema solare is most frequently observed in the spring and in fair persons, that is, when the pigment of the skin is impoverished. The pigment of the skin is, in fact, a defence against the inflammatory influence of the chemical rays, and this doubtless is the reason why the skin of different races becomes darker the nearer we approach the equator. It is not surprising that in disease the skin requires still more protection from the chemical rays. This can be most conveniently brought about by filtering the light through red glass or red curtains.

Seven men report 70 cases of small-pox in which this method was followed, and it failed in but one case. When the patients come under treatment early enough, that is, before the fourth or fifth day of the disease, suppuration of the vesicles, even in unvaccinated persons and in most cases of confluent small-pox, will be avoided — one exception out of 70; as a rule the secondary fever does not appear, but even when it does the temperature is lower and the fever of shorter duration. As a result of the absence of suppuration, the disease becomes of shorter duration and less dangerous; further, the patient escapes pitting. This treatment is only a skin treatment; upon the infection itself it has no influence. If the patient comes under the treatment after the fifth day of the disease, it is uncertain whether the suppuration can be avoided.

[1] British Medical Journal, December 7, 1895.

The following are the main points to be observed in carrying out the treatment:

(1) The exclusion of the chemical rays must be absolute; even a brief exposure to daylight may produce suppuration and its sequelæ. The skin must be treated therefore as one would a photographic plate. If red window glass is employed, it is necessary for it to be of a deep red color, and if curtains are used they must be very thick or in several layers. When the patient takes his meals, or during the physician's rounds, artificial light — for instance, faint candle light — may be used without any danger. As even a brief exposure to daylight can produce suppuration, in order that the treatment may be carried out correctly it may be necessary to nail the curtains to prevent meddlesome interference by attendants.

(2) This method does not prevent, but allows the employment of any other treatment which may be considered necessary.

(3) The treatment should be commenced as early as possible; the nearer the commencement of the suppuration the less the chance of success.

(4) The patient must remain in the red light until the vesicles have dried up.

So far Finsen had made use of his discovery from the negative standpoint, that is, by excluding the chemical rays he avoided further irritation of the already inflamed skin and the small-pox patient escaped "pitting"; [2] now he has employed the discovery in a positive manner by making use of these same rays as curative agents. The plan consists in treating local, superficial skin diseases by the concentrated chemical rays of light, and is based on the following experimentally proved data:

(1) The bactericidal property of the chemical rays of light. This has been studied by many investigators and demonstrated to be especially due to the blue and violet rays. To use this property of light therapeutically, the greatest possible number of violet and ultra-violet rays must be procured. Another condition for the advantageous use of this bactericidal property of light is that the bacteria are quickly killed. But the strongest sunlight in summer has too slight a bactericidal property ever to be of any value therapeutically, and in order to obtain a more energetic effect Finsen concentrated the light by means of a special apparatus. This concentrated light — an electric light, by the way — kills the bacteria in a few seconds when they are spread in a stratum of agar about one-fifth of a millimetre thick.

(2) The second principle underlying the method is that chemical rays of light are capable of producing an inflammation of the skin. Of this enough has been said.

(3) Chemical rays of light penetrate the skin. This was demonstrated by placing small sealed glass tubes containing muriate of silver under the skin of dogs and cats. Some of the animals were then placed in the dark, while others were exposed to direct sunlight. After an hour it was invariably found that the muriate of silver was blackened in those animals exposed to the sun, but not in those kept in the dark. Chemical rays of light penetrate the skin, but they penetrate the anemic skin more readily than the normal skin. Finsen showed this by placing a piece of sensitized paper on one side of a man's ear, and letting the blue and violet rays of his apparatus for

[2] Philadelphia Medical Journal, 1899.

concentration of sunlight fall on the other side of the ear. After five minutes this paper was not affected; on the other hand, the paper was distinctly blackened in twenty seconds if all the blood were pressed out of the ear between two glass plates. Accordingly, the area of skin to be treated must be made anemic.

In the treatment of patients sunlight is used in summer when the sky is bright, otherwise the light of electric arc lamps of fifty to eighty amperes. Not only must the light be concentrated to be of bactericidal value, but it must be cooled to avoid burning the skin. This is attained by means of a lens which is composed of a plain glass and a curved one framed in a brass ring. Between the two glasses is a bright blue weak ammoniacal solution of copper sulphate. Thus one has a convex lens which will concentrate the light, and because of the blue liquid absorb the heat rays (ultra-red, red and yellow). The blue, violet, and ultra-violet rays, on the other hand, are but slightly impaired by passing through this lens. For further details relating to the apparatus the original articles must be consulted.

The skin is first rendered anemic, and an area of one and one-half centimetres in diameter is treated for an hour daily. The treated skin reddens and swells, a bulla may appear, but necrosis has never been observed. Different skin diseases known, or supposed, to be of microbic origin have been treated, but it is only of lupus vulgaris, lupus erythematosus and alopecia areata that there have been sufficient cases to estimate the value of the method.

About 350 cases of lupus vulgaris have so far come under observation. At present only the skin, hard palate, the front part of the septum nasi, tongue and mucous membranes of the cheek can be healed by this method. In none of the cases has the treatment been quite without effect, but in about five cases the improvement was very slow. How striking the results have been is shown in the original articles by photographs of the patients before and after the light has been used. It takes some time before any improvement is visible, but from the time it begins it continues without interruption until the last nodule of the luprous patch has disappeared. The result of treatment has been so constant in these cases that there is reason to doubt the diagnosis when the method is ineffective. The apparatus now is vastly more bactericidal than that of last year, so better results are to be anticipated.

The principal advantages of the method are, besides its reliabililty, its excellent cosmetic results, the infrequency of relapses and their slight extent and that the treatment is painless.

With lupus erythematosus the effect is not nearly so sure as it is in the cases of lupus vulgaris. A few cases have improved very slowly, but with a constant tendency to recurrence.

The trials made in alopecia areata look promising, but further experiments are necessary.

ANTITOXIN TREATMENT OF DIPHTHERIA.[3]

The results obtained from the use of antitoxin in diphtheria, as published in the February *Bulletin* of the Department of Health, city of Chicago, should be sufficiently convincing to demonstrate to any skeptic the efficacy of this form of treatment.

From October 5, 1895 (the date of the first administration of antitoxin by the department), to February 28, 1899, a period of nearly three and one-half years, a total of 6,342 reported cases of diphtheria were visited by the department inspectors. Of this number 4,311 were bacterially verified as true diphtheria, and 4,076 were treated with antitoxin — the remaining 235 either refusing antitoxin treatment or being treated by other physicians, the results not being known. The results show 3,795 recoveries out of the 4,076 cases treated by the department. There were 276 deaths, and five cases were still under treatment at the close of February, 1899.

The figures of recoveries, 3,795, and of deaths, 276, give a mortality rate of 6.77 per cent. in 4,071 cases of bacterially verified diphtheria treated with antitoxin.

The further analysis of the 4,071 cases of diphtheria is of interest. In 355 cases treated on the first day of the disease there was only one death, a mortality of only 0.28 per cent.; in 1,018 cases first treated on the second day of the disease there were 17 deaths, a mortality of 1.67 per cent.; in 1,509 cases first treated on the third day of the disease there were 57 deaths, a mortality of 3.77 per cent.; in 720 cases first treated on the fourth day of the disease there were 82 deaths, a mortality of 11.39 per cent.; and in 469 cases first treated later than the fourth day there were 119 deaths, a mortality of 25.37 per cent. These statistics show conclusively the advisability of giving the antitoxin as early as possible.

The *Bulletin* states that the death-rate of 6.77 per cent. from diphtheria during the past three years, since antitoxin has been used, shows a decline of 43 per cent. as compared with that for the previous three years, when other methods of treatment were in vogue.

IODIPIN.

Iodipin is a chemical compound of iodine with oil. Its taste and appearance is that of the fat used in its manufacture. It is extremely stable, and even after months there is no setting free of the iodine. It is absorbed as fluid fat by the body, and partly as such is deposited in the muscles, liver, bone marrow, and subcutaneous tissues; partly is split up. The chief part of the iodine leaves the body as potassium iodine.

The objects which led Klingmüller,[4] under Neisser's direction, to try the effect of iodipin subcutaneously were twofold; the need of a preparation of iodine which could be used in this way in mental diseases where the drug either cannot or will not be taken by the mouth, and secondly to avoid gastro-intestinal disturbances which are apt to arise by its long continued use.

Winternitz has shown that iodipin injected subcutaneously is absorbed as such and is stored up as an iodine fat. It is gradually appropriated by the organism, and the iodine gradually (in one case 53 days) leaves the body in the urine. From his experience with 400 – 500 injections Klingmüller draws the following conclusions:

(1) Iodipin given subcutaneously has a specific action on tertiary lues.

(2) The organism remains longer under the influence of the iodine than with other preparations yet employed.

[3] American Journal of the Medical Sciences, 1899, p. 86.

[4] Berl. klin. Wochen., 1899, No. 25, p. 540.

(3) By the subcutaneous method none of the iodine is lost.

(4) The organism works over the iodipin administered slowly and uniformly.

(5) No signs of iodism occur.

(6) The dose can be absolutely graduated.

(7) The subcutaneous use of iodipin allows an iodine treatment of patients who for one reason or another cannot or will not take iodine.

(8) The body can be placed under the influence of iodine for weeks or months by means of an injection cure which demands but a few days.

The therapeutic use of iodipin in bronchial asthma and emphysema.— Frese [6] has tried this drug in six cases of bronchial asthma and seven of asthmatic complaints in chronic emphysema and bronchitis. It was given in a 10-per-cent. preparation, and of this two or three teaspoonfuls daily. A teaspoonful would be equivalent to about 0.5 grammes (7 grains) potassium iodide. One of the patients objected to it on account of its oily taste. The results obtained were in almost all cases favorable, in some surprisingly so. Frese reports eight cases and comes to the following conclusions: In iodipin we have a medicament which is active in the same way as potassium iodide; as it acts as iodine and not as the salt it affords confirmation of the idea that the active part of the potassium iodide is due wholly to the iodine and not in part to the potassium, as some have thought; it does not disagree with the stomach, while it at times increases intestinal peristalsis; signs of intoxication were at no time observed, coryza being transitorily present but once; the favorable effects last for several days after the discontinuance of the drug; it acts quickly, a reaction from iodine being obtained in the urine in twenty minutes.

Radestock [6] speaks highly of the effects of iodipin when given by the mouth. He used up to 40–50 grammes daily without harmful results. He also used it in the form of an ointment to be rubbed into the skin, and proved its absorption in ten minutes.

RED MEATS AND THE RESTRICTION OF LIQUIDS IN CHRONIC NEPHRITIS.

It is discouraging to look at the more recent books on renal diseases and find so little that is therapeutically new. Cushny says in his "Pharmacology and Therapeutics" that the period of constructive pharmacology has scarcely dawned; at present its chief function is destructive and critical, and it is due to this latter fact that the patient with Bright's disease in the next few years will have a much more endurable life.

Von Noorden [7] comments on the meat diet which is laid down for nephritic patients. It has grown to be a custom to allow such patients only the white meat of fish, birds and veal, while the white meat of pork is already looked at askance; dark meat, no matter its source, is struck out by many physicians. Many patients who literally follow this diet develop in time such a repugnance to white meat that they limit their meat diet to the smallest quantity. Their albuminous food sinks little by little in amount until their nutrition is lowered and their strength diminished. Give them the variety of dark meat and appetite and strength return. This is the practical side of the question. On the other hand, is there any commonsense in the exclusion of these dark meats? "I have not found in all the literature a single exact clinically experimental basis for this, but only hypothetical affirmations over the greater content of irritating products (especially nitrogenous extractives) for the kidneys in brown meat." As for these extractives, the physiological text-books put down creatinin as exceeding 0.3 and 0.4 per cent. in the white meat of poultry and rabbits, but it never reaches in beef 0.3 per cent. The essential difference between white and brown meat rests in the amount of coloring matter, whose chemical constitution is not yet accurately known.

Against these empty claims, copied from book to book, of the harmfulness of dark meats for the patient with Bright's disease (or, for that matter, gout), von Noorden records the following: A patient, with chronic parenchymatous nephritis, who took one-half pound poultry daily for five days, excreted the same amount of nitrogen and a trifle more albumin than he did in the next five days, in which instead of the poultry he took an equivalent amount of nitrogen in beef.

Von Noorden also has studied the effect of the amount of liquids in the food on such patients. His results have led him to believe that in many cases a restriction of the amount of fluids to 1,250 or 1,500 cubic centimetres (42 to 50 ounces) can be of extraordinary advantage. This treatment is peculiarly applicable to those cases with cardiac asthma and dilatation of the heart. There is relief from the asthmatic attacks, the establishment of restful sleep, and, proportionately to the small amount of fluid ingested a copious diuresis, and above all an undoubted diminution in the cardiac area. This proportionately favorable condition can last several months.

If the excretion of urea, uric acid and similar bodies should be hindered by such a procedure, that would be enough to condemn it. This, however, is not the case, and from his studies in this direction von Noorden concludes that patients with interstitial nephritis suffer no diminution in the elimination of the important metabolic products by the restriction of liquids to one and a quarter litres.

(To be continued.)

[6] Münch. med. Wochen., No. 7, 1899, p. 214.
[6] Therap. Monats., 1899, p. 551.
[7] Verhand. d. Cong. f. inn. Med., 1899, p. 386.

Reports of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

SIXTEENTH ANNUAL MEETING, HELD IN NEW YORK ACADEMY OF MEDICINE, OCTOBER 24, 25 AND 26, 1899.

FIRST DAY.

DR. CHARLES STEDMAN BULL, of New York, presented a paper entitled

OPERATIVE TREATMENT OF HIGH MYOPIA BY REMOVAL OF THE CRYSTALLINE LENS.

In introducing the subject he alluded to the startling prevalence of myopia among school children, and urged that greater attention be given to school hygiene, including a study of methods of lighting and ventilation, and the proper adjustment of the height of the desks to that of the pupil. Before deciding upon this operative treatment for high myopia, the age and occupation should be taken into consideration; the visual field should be tested, and, by the ophthal-

moscope, the state of the blood-vessels of the retina should be determined. If there were present any degenerative changes in the retina or choroid in the region of the macula, the operation should not be done, for under such circumstances the operation would almost certainly lead to retinal intra-ocular hemorrhage and destruction of the eye. The indications for this operation were: (1) Insufficient visual acuity for the needs of the individual patient; and (2) rapidly increasing nearsightedness or an existing myopia of twelve diopters or over. The contraindications were: (1) Extensive degenerative changes in the retina or choroid in the region of the macula; (2) detachment of the retina; (3) opacities in the vitreous; (4) previous loss of one eye from whatever cause; (5) decided loss of transparency of the cornea; (6) any form of contagious conjunctivitis, especially trachoma; (7) advanced age; and (8) less than twelve diopters of myopia. The dangers were: (1) Intra-ocular hemorrhage from rupture of choroidal or retinal vessels; (2) detachment of the retina; (3) secondary glaucomatous symptoms; and (4) infection of the cornea or iris.

PROGRESS OF THE SCIENCE AND ART OF OBSTETRICS.

Dr. Florince O. Donohue, of Syracuse, presented this communication. While he attributed a large part of the present low rate of mortality following childbirth to our knowledge of germs and to the modern use of antisepsis, he pointed out that no small share in this gain was probably dependent upon the earlier use of forceps in prolonged labor, the more frequent induction of premature labor in cases of contracted pelvis, the modern treatment of eclampsia and of postpartum hemorrhage, especially in the prophylaxis of the latter. Cæsarean section or a resort to the induction of premature labor seemed to him proper substitutes at the present time for craniotomy in cases of dystocia resulting from contracted pelvis.

Dr. William E. Swan, of Saratoga Springs, advocated an early resort to a bacteriological diagnosis in cases of puerperal fever, as a guide in the subsequent treatment.

Dr. W. E. Finder, of Troy, took issue with the preceding speaker on this point, asserting that the bacteriological examination would help but little in actual practice, and might be responsible for serious delay in instituting treatment.

Dr. Henry Risch, of Brooklyn, pointed out that puerperal infection from the surrounding air was possible. To avoid this possible danger he recommended that the physician should make his vaginal examination with one finger so as to allow of the labia remaining closed around the examining finger.

IMPRESSIONS OF THE WORK OF THE INTERNATIONAL GYNECOLOGICAL CONGRESS AT ANTWERP, 1899.

Dr. A. Palmer Dudley, of New York, made this report. He stated that in the discussion on the treatment of uterine fibroids, the opinion prevailed that the abdominal route was the only proper one for most cases. In the discussion on the comparative merits of the true Cæsarean section, the Porro operation, symphyseotomy and induction of premature labor, the consensus of opinion was that except in cases complicated by fibroids, Cæsarean section was the only operation suitable at the present day. An announcement in this report that could not fail to be of interest to all Americans was that it was generally conceded that the only really original contribution to the work of the Congress had been made by an American.

SOME PRACTICAL EXPERIENCE IN ASEPSIS AND ANTISEPSIS IN OBSTETRICS.

Dr. Douglas Ayres, of Fort Plain, in this paper laid stress on asepsis not being sufficient in obstetric practice — antisepsis was demanded. Not only should the parturient woman be carefully taught regarding methods of personal cleanliness, but the physician, at the time of the patient's confinement, should most carefully cleanse the external genitals, first with soap and water, and then with a solution of corrosive sublimate or of carbolic acid. Vaginal examinations should be avoided as far as possible, and when required they should be preceded by the preparation of the examiner's hands and arms, considered essential before a modern surgical operation. He did not favor the use of the douche in uncomplicated cases of labor. To ensure cleanliness it would be found convenient for the obstetrician to provide two flannel bags for his instruments, so that one of these cases would always be clean and in condition for use.

HYDRORRHEA GRAVIDARUM AND HYDROSALPINX.

Dr. Frederick S. Cowles, of Westbrook, Conn., in this communication advanced a theory regarding the etiology of some cases of hydrorrhea, which he had been led to adopt because of a case coming under his observation. The case was reported in detail. It suggested that, at least, in certain instances the hydrorrhea might be due to a discharge of fluid through a Fallopian tube, the seat of a hydrosalpinx. In the same way he sought to explain many cases in which it was supposed that there had been an escape of the amniotic fluid some time before the onset of labor.

A BRIEF SUMMARY OF THE INDICATIONS FOR OPERATION UPON THE STOMACH.

Dr. Max Einhorn, of New York, in this paper reviewed the various operations done on the stomach, and gave the indications for each. In cases of malignant disease he advocated prompt operation, but where this organ was the seat of a benign growth he was in favor of trying all other methods of treatment first.

Dr. De Lancey Rochester, of Buffalo, thought that even in cases of benign tumor it was not wise to wait very long before operating unless other methods were evidently benefiting the patient.

THE VALUE OF OPERATIVE TREATMENT OF SPINA BIFIDA.

Dr. W. B. Reid, of Oneida, reported, under this caption, an original method of operating that he had adopted successfully in a case of spina bifida, of the variety known as meningocele. The precaution had been taken of making daily aspirations of the fluid for three days prior to operation, in order to forestall, as far as possible, any untoward results from the sudden release of the pressure to which the brain and cord had been subjected. The sac had been dissected out and excised close to the pedicle, leaving the latter as a plug, which nicely filled in the cleft. The patient had been kept in a plaster-of-Paris jacket for fourteen weeks, but had entirely recovered, and at the time of

writing, two years after the operation, was perfectly well.

DR. H. O. MARCY, of Boston, gave a brief description of a case of very large spina bifida upon which he had successfully operated, the method adopted being to close the opening just as one would do in an ordinary hernia operation.

SOME CUTANEOUS MANIFESTATIONS OF SYPHILIS AND OTHER AFFECTIONS OF THE SKIN.

DR. JOHN A. FORDYCE, of New York, then gave an interesting lantern-slide exhibition, with a running commentary of a large number of cutaneous manifestations.

DOES THE PRESENT METHOD OF SECURING EXPERT TESTIMONY SUBSERVE THE ENDS OF JUSTICE?

HON. WILLARD BARTLETT, Justice of the Supreme Court, opened this discussion by giving a brief description of the usual legal procedure, particularly in negligence cases. He said that as scientific experts were frequently called upon to make physical examinations or chemical analyses in order to qualify them to give opinion evidence at the trial, they naturally expected proper compensation for their work, and hence had arisen the practice of the experts being paid by the litigants who summoned them. They had, in consequence been severely criticised, again and again, as partisans who, consciously or unconsciously, mould their opinions so as to promote the cause of the suitor in whose behalf they were called. The partisan character of such testimony became unmistakable when a medical man participated, not only as a witness giving opinion evidence, but also as an advisor to the counsel engaged in the trial. Upon this point the speaker expressed his opinion very strongly. He said that it seemed to him that the wise physician would take care never to act in both these capacities. He declared that this double rôle, so often assumed by medical men, had much to do with the existing opinion regarding the comparative worthlessness of medical expert evidence. Regarding suggested reforms, Judge Bartlett said that it was impossible, because unconstitutional, to introduce any new plan which would prevent litigants from calling any expert witnesses of their own selection, nor would any plan be likely to succeed which would protect expert witnesses from cross-examination. The remedy suggested by him was such an amendment of the medical code of ethics as would sufficiently define and regulate the conduct of the medical expert witness.

HON. JOSEPH L. DALY discussed the present system and declared, that in spite of much harsh criticism arising from the medical expert accepting a fee from the party calling him, he could not see any more harm in it than for legal counsel, who were nothing but legal experts, to be paid in a similar manner — a state of affairs which did not seem to arouse any adverse criticism.

CHARLTON T. LEWIS, ESQ., was the next speaker. He did not hesitate to show the defects of the present system of jurisprudence, and to assert that just here was to be found the chief cause of trouble. In his opinion, the ideal plan would be to have expert evidence heard only by an independent scientific court.

WILLIAM A. PURRINGTON, ESQ., after a hasty and humorous sketch of

THE MEDICAL EXPERT OF THE PAST, THE PRESENT, AND THE FUTURE,

said regarding the supposed necessity for cross-examination, that although judges were really experts, their opinions had binding force for the time being.

SECOND DAY.

DR. GEORGE O. GOLER, of Rochester, read a paper entitled

THE NECESSITY FOR STATE AID IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

He directed attention to the annual death-rate from consumption in New York State of 13,000, and added that assuming the average life of the consumptive to be four years, there would always be in this state about 50,000 cases of tuberculosis. The State had spent large sums of money on its epileptic and insane, but it should go further and establish sanatoria for consumptives. If incipient cases were treated in these institutions it would be possible to cure 70 per cent.

SANATORIUM TREATMENT AT HOME FOR PATIENTS SUFFERING FROM PULMONARY TUBERCULOSIS.

DR. S. A. KNOPF, of New York, in this paper, described the important features of sanatorium treatment, and suggested certain modifications by which the method could be applied to home treatment. He also indorsed the treatment of indigent consumptives in State sanatoria.

DR. DE LANCEY ROCHESTER, of Buffalo, spoke of the difficulty experienced in getting patients to use the flask or use the paper handkerchief for expectoration. While he favored the free use of milk by the pulmonary invalid, it was in his opinion better to order half a pint to one pint taken at regular intervals. It was not advisable to take milk sooner than three hours and a half after an ordinary meal. In practising hydrotherapy in private practice he had found that a good deal could be accomplished with the ordinary round tub. Where cool affusions were practised it had seemed to him better to substitute for the pitcher a fountain syringe with a large spray nozzle. The warm bath was as important as the cool one, and should be taken at least twice a week. Where the reaction of the skin was especially feeble, the warm-air bath might be substituted with advantage.

DR. WICKES WASHBURN, after making a plea for the incorporation of the "farm colony" in the proposed system of State sanatoria, introduced the following resolution, which was adopted:

Resolved, That the New York State Medical Association approve of the State establishing sanatoria for the care of consumptives, and that it is the sense of this Association that sanatoria for the incipient cases should be conducted in connection with the farm colony.

(To be continued.)

EPILEPTIC COLONY FOR ILLINOIS. — Dr. W. R. Spratling, Sonyea, N. Y., presented the claims of the epileptics of Illinois before the Conference of Charities and Correction, recently held at Bloomington, Ill. His suggestion was that the State secure large acreage and available soil and establish a colony and provide employment for the patients, as is already done in several other States.

Recent Literature.

The Medical Complications, Accidents and Sequelæ of Typhoid or Enteric Fever. By Hobart Amory Hare, M.D., B.Sc., etc. With a special chapter on the Mental Disturbances following Typhoid Fever, by F. X. Dercum, M.D. Philadelphia and New York: Lea Brothers & Co. 1899.

This octavo of two hundred and eighty-six pages deals with the aberrant forms of typhoid fever and the courses which they pursue. The author is a colleague of Dr. W. W. Keen, at the Jefferson Medical College. Dr. Keen's valuable and suggestive essay on the Surgical Complications and Sequelæ of Typhoid Fever is already familiar to many. Dr. Hare's book is in a measure complementary to Dr. Keen's, and the two in part necessarily cover the same ground.

Dr. Hare divides his subject into seven chapters: General Considerations; Varieties of Onset; The Aberrant Symptoms, States or Complications of the Well-Developed Stage of the Disease; The Complications of the Period of Convalescence; The Conditions which ape Typhoid Fever; Duration and Immunity to Second Attacks; The Mental Complications. The chapters on the Well-Developed Stage of the Disease, and the Period of Convalescence are the most important and the most interesting. The management of cases with perforation has undergone, and is undergoing, a revolution; the same may be said of both the diagnosis and management of cases with cholecystitis. Just what the relation of the surgeon should be to such cases is being rapidly more definitely determined. To Keen's list of cases of surgical operation after perforation Hare adds 20 cases collected by Platt (*Lancet*, February 25, 1890), and one by Taylor, of Richmond, Va. This case in a child recovered, as did one of Dr. Platt's own three cases. There seem to have been 104 cases reported, with 21 recoveries — about 20 per cent. of cures. Undoubtedly by the end of the present year the list of operations will have been largely increased, and it is quite possible that the percentage of recoveries will be diminished rather than increased.

Dr. Hare has chosen a legitimate and important field from which to glean for the making of a book, and has made a book of value and convenience to the practitioner.

Specielle Pathologie und Therapie. Herausgegeben von Hofrath Professor Dr. H. Nothnagel. Band XIX, II Hälfte, II Theil, III Heft. "Die Krankheiten der Prostata." By Dr. A. von Frisch, A. O., Professor of Surgery in Vienna. 1899.

Under the above title the author has given us a comprehensive and exhaustive treatise upon the diseases of the prostate.

With some exceptions it is characterized by the thoroughness and attention to detail that is traditional in German works, but it lacks perspective, and in the exceptional places referred to there is a lack of just the information that is most needed. An example of this is seen in that part of the chapter which deals with the operative treatment of prostatic hypertrophy. Here the author expresses his opinion of the value and place that should be held by the more radical measures of prostatectomy performed by various methods, without offering substantial data to support them, and to show how his conclusions are reached; furthermore, there is insufficient description of the methods of performing these operations. On the other hand, a relatively undue prominence is given to Bottini's operation, which in certain classes of cases the author prefers. This operation is not judicially or critically presented. This is shown, for example, in the writer's statement that this method can be applied to any form of prostatic hypertrophy, which in our judgment is not, and has been shown not to be, true.

The different chapters are presented in a well-considered series and in logical sequence, beginning with the anatomy and physiology and continued with the description of the methods of examination of the prostate in the living subject, the congenital malformation of the gland, acute and chronic inflammation, neuroses, tuberculosis, hypertrophy, atrophy, concretions and stones, tumors, and finally parasites of the prostate. The chapters on anatomy and physiology and pathological anatomy, and also that on congenital malformations of the prostate are especially good.

Diseases of the Eye. A Hand-Book of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College; Professor of Diseases of the Eye in the Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia Hospital, etc. With 225 illustrations and two chromolithographic plates. Third edition, thoroughly revised. Pp. 696. Philadelphia: W. B. Saunders. 1899.

This text-book, which has been through two previous editions since its publication in 1892, has been before reviewed in these columns. The present edition has been revised and the work brought up to date, special paragraphs have been added on pneumococcus conjunctivitis, diplobacillus conjunctivitis, and other subjects in which recent progress has been made. The book will no doubt continue to be a favorite one with students.

The Medical News Visiting List for 1900. Weekly (dated, for 30 patients). Three styles containing 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Philadelphia and New York: Lea Brothers & Co.

This excellent visiting list presents the usual attractive appearance, with a selection and arrangement of contents which experience has shown to be convenient and satisfactory. The Table of Doses and The Therapeutic Reminders have been revised in accordance with the changes and advances of the past year.

Burdett's Hospitals and Charities, 1899. Being the Year Book of Philanthropy and the Hospital Annual. By Sir Henry Burdett, K. C. B. London: The Scientific Press. New York: Charles C. Scribner & Sons.

This book, which it is intended should be an annual, has this year, we are informed, been unexpectedly and unavoidably delayed. It is Sir Henry Burdett's intention that it should appear regularly in each year in March. It has much information in a comparatively small space, and it is the aim of its author to ensure its accuracy and keep it well up to date.

THE BOSTON

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PROFESSOR OSLER'S ADDRESS AT McGILL UNIVERSITY.

PROF. WILLIAM OSLER this year delivered the address at the opening of the session of the Medical Faculty of McGill University, an institution with which he has close associations. The address is largely reminiscent, to a certain extent personal, and as coming from a man who has gained an eminent place in medicine should be read with interest by those whose futures are still unformed, as well as by those whose experience has differed from Osler's in establishing for themselves a name and a place. Evidently no dogmatic rule is to be laid down for the guidance of young men in their development; the personal element and circumstances are always to be reckoned with. At the same time it is often profitable and always interesting to trace the career of a successful man. This Osler does for us in the address published in the *Montreal Medical Journal* for November, 1899, entitled "After Twenty-five Years," to which we have alluded. His own creed he sums up in the following paragraph: "As to your method of work, I have a single bit of advice, which I give with the earnest conviction of its paramount influence in any success which may have attended my efforts in life—*Take no thought for the morrow.* Live neither in the past nor in the future, but let each day's work absorb your entire energies, and satisfy your widest ambition. That was a singular but very wise answer which Cromwell gave to Bellevire—'No one rises so high as he who knows not whither he is going,' and there is much truth in it. The student who is worrying about his future, anxious over the examinations, doubting his fitness for the profession, is certain not to do so well as the man who cares for nothing but the matter in hand, and who knows not whither he is going!" It is hardly to be supposed that such a policy would meet every man's needs, or most completely develop his possibilities. The exigencies of life would surely not permit such unrestrained drifting, except to those who, like Osler, are sure from the beginning that the apparent uncertainties of the present are destined to lead to some definite goal. To the ordinary student, whose mediocrity must be considered, the advice, "Take no thought for the morrow," is somewhat risky, and to our mind not likely to lead him into paths of even ordinary success. Unfortunately, most of us belong to the mediocrity.

Again, at the conclusion of his remarks, Osler quotes a passage which he had printed on the title-page of a note-book, for distribution among his students during the early years of his teaching. The passage reads: "The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it and converts itself into practical power. The rest hangs like dust about the brain or dries like raindrops off the stones." The query suggests itself: What knowledge is there which a man may not use? It certainly is not desirable, and we think it is not Dr. Osler's intention, to decry work which has no apparent and immediate use, for upon such work so-called practical medicine is certainly built. Knowledge which is not capable of use is surely a contradiction in terms, even though such knowledge may long fail of direct practical application.

While clearly recognizing the changes which have taken place in medical education and teaching, in the last few years, we are glad to see that Osler still holds out for the didactic lecture, which from various sources has of late been so vigorously attacked. There will, he says, always be men who can present a subject in a more lucid and attractive manner than it can be given in a book. The place of the didactic lecture, as we have previously had occasion to say, is, in our opinion, one of growing rather than decreasing importance, only modified to meet the more stringent demands of the future. In this connection Dr. Osler alludes to papers by Bowditch and Mall, to which reference was made in these columns shortly after their publication, relative to the future problems of medical education. Speaking of these papers he makes the following remark, not too commonly heard from the lips of men who have reached the middle period of life: "I would commend them particularly to the younger men, in whose hands alone such radical changes can be carried out. A man who has been teaching for twenty-five years is rarely in a position to appreciate the necessity of a change, particularly if it touches his own special branch."

Altogether this address is one of the most entertaining it has been our pleasure to see for a long time, full, as it is, of delightful personalities combined with the results of a ripe experience.

MUNICIPAL GYMNASIUMS.

THE general health of a community must ultimately depend upon the health of its poorer classes. It is therefore advisable, in the interests of public sanitation, to take all legitimate measures to ensure a high standard of physical strength, and, secondarily, of

moral stamina throughout the thickly settled portions of our large cities. Boston, under the administration of its present mayor, has certainly set an example of progress in this regard by the development of an extensive park system, with which is connected elaborate facilities for physical exercise and particularly for bathing. No one questions the desirability of such innovations in themselves; they must, on the whole, conduce to a higher degree of general health and to a more normal social life. Objections, as we know, have been urged on the ground of expense, a matter, however, which does not concern us in the present discussion.

It may not be generally known that this summer for the first time the Playground Committee of the Massachusetts Emergency and Hygienic Association, aided by city funds, established four out-of-door gymnasiums in school yards of crowded districts. These gymnasiums were intended for boys, and, secondarily, girls, of from fourteen to eighteen years of age, and were presided over by men experienced in physical training. They were attended by large numbers and were regarded as a success by those especially interested in the undertaking.

Following on this beginning we learn that a new and expensive gymnasium has recently been opened in South Boston, to be supported at the city's expense. In his remarks at the dedication of the building Mayor Quincy said that it was the opening of the first municipal gymnasiun in a building, and, so far as could be ascertained, it was the first municipal gymnasium of any pretensions in any American city. This departure from the ordinarily accepted method of expenditure of city funds is in our opinion one to be encouraged, always within reasonable limits, with a sufficient discretion, and provided other more vital matters are not starved in consequence. There can be little doubt that the effect upon the people of such an institution conveniently placed, to which they may have free access, will conduce to better health and better morals than many more direct means. It is young men who particularly need to be reached and influenced before they have actually entered upon a course of petty crime and moral degradation. We feel confident that physical exercise and muscular training, to which careless modes of life are antagonistic, will do more to keep boys and young men from the liquor shop than any amount of legislation. The moment a spirit of healthy rivalry is established in physical sport, requiring a certain degree of training, we may be sure that a more normal moral tone will prevail. This, at least, appeals to us as an argument in favor of the opening of such gymnasiums, even at considerable expense; it is a rational way of meeting certain difficult social conditions. As has been said, the plan is as yet largely in an experimental stage. However theroetically plausible the arguments in favor of such establishments may be, it is quite necessary to wait for the sanction of experience before making definite claims. In the meantime we hope the experiment will be thoroughly tried.

Mr. Robert A. Woods, of the South End House, whose opinion should have much weight in a matter of this sort, has recently pointed out that an indoor gymnasium on a smaller scale has been in successful operation in East Boston for two years. He is convinced of the decided beneficial effect upon both sexes which this gymnasium has exerted. The number of persons going to it is about 5,000, and it is estimated that not far from 2,000 individuals make use of the gymnasium every week. In the light of these facts it is impossible to deny that privileges are appreciated and that benefit must result to a portion of the community most in need of such normal physical recreation. Mr. Woods, writing to the *Boston Evening Transcript*, says: "It is granted that the City Government at present can ill afford to undertake new maintenance expenses; but every large business enterprise in these days is compelled to make considerable investments in order to make sure of ultimate economies. In a great city like Boston this method will be more and more essential. The City Hospital costs upwards of $1,000 per day; the houses of correction cost $600 a day. Consider also the running expenses of the police department; the police and criminal courts; the Board of Health; the Overseers of the Poor; the departments for paupers and neglected children. Common sense demands that in some way a determined attack should be made upon the causes of this enormous expense. A half-dozen gymnasiums, based upon the East Boston model, set down in the congested districts of the city, would within a few years far more than pay their own expenses by cutting off, to some extent, the supply of disease and crime which has to be so dearly paid for by the city."

With this statement of the case we are in essential agreement. As the true function of the physician is to prevent disease, so the function of the city is to prevent crime, which sooner or later leads to disease and dependence. The gymnasium is one possible method.

ANNUAL RFPORT OF THE SURGEON-GENERAL OF THE NAVY.

In his annual report, just published, Admiral Van Reypen, Surgeon-General of the Navy, makes a strong recommendation for an increase in the medical corps of that service. He points out that while there has been a steady increase in the enlisted force during the past two years, and while the Marine Corps has been swelled by the addition of 3,000 men, there has been no suitable provision made for the corresponding increase in the medical corps, which is charged with the care of the health of these men. The surgeon-general therefore recommends that the corps be increased by five surgeons and 20 assistant surgeons, and that the volunteer surgeons who served in the war and are now in the service be transferred to the regular rolls and the age limitations be removed in their cases. There are now 18 of these men, and in some

cases they are over thirty years of age. It is also earnestly urged that the naval assistant surgeons be placed on an equality with those of the army in pay and rank. At present the army can get all the medical service that it needs, while the navy has great difficulty in obtaining candidates for the necessary examination. There are now four vacancies in the rank of assistant surgeon and eight more will occur during the year, and the hope is expressed that the corps will not be allowed to die out from lack of recruits, which must follow unless the inducements to young medical men are at least equal to those offered by the army.

The surgeon-general calls attention to the fact that of the 84 naval casualties during the war with Spain, only 17 have as yet resulted in applications for pension; a noteworthy fact in that 18 of the casualties resulted fatally.

In concluding the report special attention is invited to the sanitary condition of the navy, and especially to that existing in the Asiatic Squadron during the past year. Early precautions were taken to prevent as far as possible the ill effects resulting from necessary climatic exposure and to give the best care and attention to the sick. The results have proved their efficacy, and the sick reports from the vessels in the Philippines indicate a high standard of physical efficiency in the squadron.

MEDICAL NOTES.

HOSPITAL ABUSE IN AUSTRALASIA. — Complaints of hospital abuse come from Australasia also.

PLAGUE IN RIO JANEIRO AND ASUNCION. — Four new cases of plague have recently been reported from Rio Janeiro, and its presence at Asuncion, Paraguay, has been officially confirmed.

DEATH OF JAMES J. TUCKER, M.D. — Dr. James J. Tucker, a physician of Chicago, died recently, aged fifty-nine years. He was a native of Boston and a graduate of Harvard Medical School in 1867.

THE "ERIN" FOR A HOSPITAL SHIP. — It is reported that Sir Thomas Lipton has expressed his willingness to equip the steam-yacht *Erin* as a hospital ship and place her at the disposal of the British Government.

EMIGRANT QUARANTINE IN EUROPE. — According to the *Medical Record*, Dr. A. H. Doty, Health Officer of the Port of New York, who recently went abroad in order to make arrangements for the detention, at the port of sailing, of emigrants from Russia until the period of incubation of small-pox had passed, after having visited Hamburg and Bremen and conferred with the steamship agents and port authorities, has gone to Russia in order to secure the co-operation of the frontier officers in that country if possible.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, November 15, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 79, scarlatina 49, measles 9, typhoid fever 18.

ADDITION TO CARNEY HOSPITAL. — An estate adjoining the hospital grounds has been purchased by the hospital. It contains 4,000 square feet of land, with a brick and frame building.

EXAMINATION FOR LICENSE TO PRACTISE IN NEW HAMPSHIRE. — The Regent of the State Boards of Medical Examiners of New Hampshire announces that the sixth examination for licenses to practise medicine in the State of New Hampshire will be held at the State House, Concord, on Thursday and Friday, December 14 and 15, 1899, beginning at 8 o'clock, A. M. All physicians who were not in practice in that State on and before March 16, 1897, must pass the examinations in order to receive a license legally to practise their profession. Application blanks should be filled out and in the hands of the Regent, Channing Folsom, by December 10th.

PURIFICATION OF SEWAGE. — A separate report upon the purification of the sewage of cities and towns in Massachusetts has been made by the State Board of Health. to be embodied in the annual report which is now being printed. It appears that at the present time works for the purification of sewage by filtration, based largely upon the experiments at Lawrence, Mass., are in operation in fourteen towns and cities of the State, varying in population from 600 to 35,000, and also in many large public and semi-public institutions. The results obtained have been highly satisfactory, the general method in use being the application of sewage intermittently to areas of prepared beds of sand or gravel, about five feet in depth.

DIPHTHERIA AND TYPHOID IN CAMBRIDGE. — Seven new cases of diphtheria have been reported to the Board of Health of Cambridge, two of them in one family, and also one case of typhoid fever. It indicates that the epidemic of diphtheria is by no means over, although it is not growing worse.

TYPHOID-FEVER EPIDEMIC AT COLLINSVILLE, MASS. — Typhoid fever has increased at Collinsville, a small town near Lowell, Mass., and the State Board of Health has been called upon for assistance. There are only four or five hundred people in the village, and forty-four cases of the typhoid have been reported since October 16th, nearly every household having a case. The State Board of Health has recommended that the water taken from Beaver Brook, which is the source of the town's supply and is known to have been polluted by a case of typhoid which proved fatal, be thoroughly boiled before using, or else that the water be taken from another part of the brook, which would necessitate the laying of a new pipe.

NEW YORK.

MORTALITY. — As the autumn advances the mortality of the city gradually diminishes, although there

was but a slight difference between the death-rate of September (17.09) and that of October (16.79). The most marked decline was naturally in the diarrheal diseases, which during the four weeks ending October 28th caused a weekly average of 37 deaths, against 94.5 in the four weeks ending September 30th. In diphtheria the weekly average of deaths increased from 21.75 to 26, in pulmonary tuberculosis, from 130.5 to 145.5, and in pneumonia, from 99.25 to 126.25.

SHORTENING THE ACADEMIC AND PROFESSIONAL COURSES. — In view of the present agitation of the question of students studying for the degree of Bachelor of Arts being allowed to substitute work in the professional schools of law and medicine for the regular college studies during their junior and senior years, the Council of the University of the City of New York, at a meeting held November 6th, resolved to make a request to the State Board of Regents to take action in the matter and determine how far this should be permitted. Chancellor MacCracken expressed the opinion that the adoption of such a plan would not affect institutions which, like the University, were provided with professional schools, but might be disastrous for the smaller colleges without such departments.

ATHLETICS AT COLUMBIA. — In his annual report, presented to the Board of Trustees on November 6th, President Low, of Columbia University, devoted considerable attention to the subject of athletics. The problem, he said, was to check as many as possible of the abuses of intercollegiate athletics and to develop all that was good in them. In order that the influence of Columbia might be thrown as strongly as possible in favor of accentuating in every way the amateur character of such competitions, he stated that a special committee on athletics, consisting of Professors Kemp and Hutton and Dr. Savage, the director of the gymnasium, had been appointed upon the authority of the University Council. To this committee had been assigned the duty of enforcing a few simple rules that were calculated to limit the tendencies to abuse in connection with athletic sports, and, on the other hand, develop all of their good points.

FOOD ADULTERATION. — The United States Senate Committee on Manufactures, consisting of Senators Mason, of Illinois, Wetmore, of Rhode Island, and Harris, of Kansas, which is conducting an investigation into the matter of food adulteration and which has previously held sessions in Washington and Chicago, began to sit for the taking of testimony in New York on November 11th. The committee is assisted by Dr. Wiley, the chief chemist of the Government.

DEATHS AFTER COMPULSORY VACCINATION. — Two deaths, one at Geneva and the other at Brewsters, which have lately been paraded in the newspapers as the result of "compulsory vaccination," have been investigated by the State Board of Health, and found to have been due to the neglect, ignorance and filthy habits of the parents of the children, who entirely failed to carry out the instructions of the physicians performing the vaccinations. One of the children died of tetanus, and the other of septicemia.

BEQUESTS. — Among the charitable bequests of the late Mrs. Henrietta Martin are $12,000 to St. Luke's Home, $5,000 to the West Side Day Nursery, and $3,000 to the Home for the Relief of Destitute Blind.

NURSES FOR HOSPITAL SHIP "MAINE." — A dozen male graduate nurses, selected at the request of Lady Randolph Churchill from the Mills Training School of Bellevue Hospital for service in the Transvaal, sailed for England on November 11th.

ARMY NOTE.

SUPERINTENDENT OF THE HOSPITAL SHIP "MAINE." — The position of superintendent of the new hospital ship *Maine*, now being equipped by Americans abroad for use by the British Government, has been offered to Dr. Julian M. Cabell, captain and assistant surgeon, United States Army, retired, and has been accepted by him. He left New York on November 15th for London, where he will assume command of the hospital relief expedition and at once proceed to South Africa. Dr. Cabell was commissioned an assistant surgeon in the regular army in 1887 and was retired in March 1897 for injuries incurred in the line of duty, holding the grade of captain at his retirement. At the outbreak of the Spanish-American War, since under an act of Congress the services of retired army officers could not be utilized as such, he entered the volunteer service and was made surgeon of a New York volunteer regiment. On the outbreak of trouble in the Philippines he was sent to that place with the rank of brigade surgeon of volunteers, where he rendered valuable service in charge of the officers' hospital at Manila. He recently returned to the United States, was mustered out of the volunteer service, and was at once made superintendent of the Columbia Hospital, in Washington, D. C. Dr. Cabell is a man of fine appearance, charming personality and unusual executive and professional ability. His selection, as regards the success of the work of which he has been made chief, is most happy; and, as regards the medical profession of the United States and of the Medical Department of the Army, he may be relied upon to prove himself their worthy representative in whatever position he may be placed.

Miscellany.

INFECTIOUS DISEASE AND PUBLIC LIBRARIES.

REFERRING to the reports circulated in the daily newspapers of the danger of infectious diseases being acquired through the books of public libraries, and espe-

cially circulating libraries, and of the recent deaths from consumption of several clerks who had been engaged in sorting old files of books and MSS., the *Medical News* expresses the opinion that, "formalin is the best agent for use in this work. It neither discolors articles subjected to its action, nor does it render them more liable to the corrosive action of time. On the other hand, it refillers articles subjected to treatment entirely clean. The time has come, therefore, for all public libraries to have attached to them a disinfecting plant where all books, pamphlets, magazines, or documents that have been taken from the library may be thoroughly disinfected before being returned to their shelves."

No doubt precaution in this regard is desirable, but to make a routine practice of adequately disinfecting all books returned to a library seems neither necessary nor practicable.

THE INTERNATIONAL ASSOCIATION OF ACADEMIES.

AN attempt has been made for several years to establish an international association of scientific societies. The project has grown, and has finally assumed a definite form, through a conference held at Wiesbaden on the 10th and 11th of October.

The immediate outcome of the conference has been, as stated in *Science*, that it is resolved to found an international union of the principal scientific and literary bodies of the world, the object of which will be to initiate or promote scientific enterprises of general interest recommended by one or more of the associated bodies, and to facilitate scientific intercourse between different countries. It is to be known as the International Association of Academies. A number of important bodies besides those represented at Wiesbaden are to be invited to join. General meetings of delegates from the various constituent academies are to take place, as a rule, at intervals of three years, but the interval may be varied and special meetings held, if necessary. The Royal Society had proposed, prior to the conference, that the first general meeting should be held in Paris next year. A council is to be appointed which will carry on the business in the intervals between meetings. The formation of committees of experts to initiate and promote scientific investigations of international importance is also contemplated. The Washington Academy was represented at Wiesbaden by Newcomb, Remson and Bowditch.

ATHLETICS AND PATRIOTISM.

DR. CONAN DOYLE, in presenting the challenge cups and medals to the winning teams of the Victoria Park Cricket Association, made some remarks with which the majority of Englishmen will agree. In most European countries conscription prevails, and consequently the younger men are compelled to undergo a certain amount of gymnastic exercises. On completion of the military training, however, such practices are usually neglected, and in no country are manly sports so continuously practised as in Great Britain. Compulsory games at school, and the large number of cricket, football, rowing and other clubs that exist throughout our land are of incalculable advantage to the country at large as tending to improve the physical condition of the race. Dr. Doyle spoke very enthusiastically on the subject and stated that the true reserves of this country are the cricketers, the footballers and the hunting men. "If ever England got in a hole it was the sporting men and the sporting spirit that would pull her out of it." He also maintained that the State had as much right to compel men to keep themselves in physical fitness as to insist on the necessity for education. — *Lancet.*

THE CONCEPTION OF DISEASE.

WE learn from the *British Medical Journal* of November 4th, that at the annual public night of the Medical Society of University College, London, Professor Clifford Allbutt delivered an address, in the course of which he observed that what was meant by the word "disease" was a matter on which there was, philosophically speaking, a good deal of difference of opinion. Judging from the theses presented for the M.D. degree at the University of Cambridge, a meaning was attached to the word which he could not accept. Candidates would say that such and such events occurred in the body, but they would not be disposed to give them the name of a morbid entity. In his opinion there was no such thing as a morbid entity; the term was founded upon conceptions which had long ago become in other subjects entirely exploded. Disease was merely a state in which the human body happened to find itself at one time as opposed to the state in which an average man found himself at another time. There was the same sort of difference between a healthy man and a diseased man as there was between a cold poker and a hot one. Diseases were merely an infinite number of various states of the body divided up purely for convenience under certain heads or names, and the names for states could not be regarded in any sense as separable entities. All classifications were fictions of the human mind, and classifications of diseases were particularly fictitious because the transitions between these various states were so many and the gradations so infinite that there was no real distinction in nature, although artificial classifications were necessary for convenience. If the various types of disease were considered, it was found that the word type had been introduced into the domain of disease from the field of biology. Biologists used types for convenience of reference, and in biology it was not difficult to do so, for it dealt with beings which had a separable and real existence. But when the use of a system of types was brought into the field of disease, the difficulty was met that disease had not only no independent existence, for it was merely a state of a particular man, but that also there were never two diseases exactly identical in this world. That is to say, if there were twenty men with cirrhosis of the liver they were all different, and it was only by sinking all the differences that a type was arrived at at all. Further, he contended that disease was not a positive, but wholly a negative, condition. Disease was something less than should be in function, some defect in the system of movements and functions. The question would naturally be asked, how was the enormous variety of disease to be accounted for if it was merely deprivation or defect. The variety

arose because man was an exceedingly complex organism. By the word "disease" was meant nothing more than that, on a fairly rough average, a particular disease was a group of symptoms. If a group of symptoms was given the name of Bright's disease, it merely meant that out of a vast variety of symptoms melting one into another but of different magnitudes, fictitious groups had been formed to which various names were for convenience arbitrarily applied.

THERAPEUTIC NOTES.

Treatment of Psoriasis Vulgaris. — Unna[1] succeeded in curing an obstinate case of psoriasis that resisted all treatment, by the following salve:

℞	Acidi salicyl. Acidi pyrogallici Ammon. sulph. ichthyol } aa	gr. xlvi
	Olei oliv.	ʒ iiss
	Adipis lanæ	ʒ iv

By the aid of the salicylic acid of the ichthyol the effect of the pyrogallic acid was greatly enhanced. In this form the salve may be safely applied also to the face without producing any irritation or discoloration of the skin.

For Local Anesthesia. — M. W. Herman[2] resorts to ethyl chloride only in abscesses surrounded by very thin and inflamed walls. He also uses one-half to one-per-cent. solution of cocaine in two-per-cent. boric-acid solution warmed previously to 50°–55° R., while before the injection one-fourth grain of morphine is administered hypodermatically. For anesthesia of mucous membranes (as in the urethra), author employs ten per cent. aqueous or alcoholic coca in solutions. Schleich's method has been of great value in his hands.

Treatment of Lupus Erythematosus. — Hebra[3] claims to have treated successfully six cases of this disease with the external application of alcohol. By the aid of medicated cotton the alcohol is brought into contact with the affected region, without, however, exerting any pressure thereon, but simply by moistening it with the saturated cotton. After several moistenings the cotton is removed until the alcohol is evaporated, and then the process is begun anew. The more frequent and the more thorough the application, the sooner does the cure ensue. The effect here is evidently that of cold and abstraction of water. To enhance this antiphlogistic procedure, Hebra resorted lately to the following mixture: Absolute alcohol, sulphuric ether and spir. menthæ piper. in equal parts. Soap is to be absolutely prohibited. Several cases have already been cured, without any recurrence as yet.

For Arthritis. — The *Riforma Medica* recommended the following as an external application for arthritis of acute rheumatism:

℞	Extr. hyoscyami	gr. xv
	Iodoformi	gr. xxx
	Sodii salicyl.	ʒ iss
	Vaselini	ad ʒ v
	M et ft. salve. Sig. For external use.	

[1] Monatschr. f. prakt. Dermat.
[2] Klin. Woch.
[3] Wien. med. Woch.

METEOROLOGICAL RECORD

For the week ending November 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r. * 8.00 A. M.	We'th'r. * 8.00 P. M.	Rainfall in inches.
S...29	29.91	62	73	52	87	81	84	S.W.	N.W.	16	10	O.	O.	.16
M...30	30.24	54	61	46	80	67	74	N.W.	N.	8	7	O.	C.	
T...31	30.08	52	55	49	75	98	86	E.	N.E.	21	24	O.	R.	.47
W...1	29.86	56	66	46	97	88	92	N.E.	S.W.	4	13	R.	O.	.70
T....2	30.17	40	46	33	84	66	75	N.W.	N.W.	25	8	C.	C.	
F....3	30.39	40	46	33	74	72	73	N.	E.	4	20	C.	F.	
S....4	29.91	50	58	41	97	70	84	N.W.	W.	6	13	G.	G.	.74
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 4, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1049	343	8.81	12.05	1.53	1.62	2.61
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	195	50	9.18	11.22	2.04	2.04	4.59
Baltimore	506,389	145	31	15.64	11.56	6.80	4.76	4.08
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	81	34	37.50	3.69	7.38	8.61	12.30
Washington	277,000	89	21	12.40	19 84	—	8.68	2.48
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	50	10	12.00	20.00	6 00	—	—
Nashville	87,754	33	5	9.09	6.06	3.03	—	6.06
Charleston	65,165	—	—	—	—	—	—	—
Worcester	111,732	22	18	8.30	4.15	8.30	—	—
Fall River	103,142	28	13	21.42	10.71	21.42	—	—
Cambridge	92,320	22	11	8.30	4 15	—	4.15	4 15
Lowell	90,114	31	13	17.16	11.44	—	5.72	5.72
New Bedford	70,511	21	4	19.04	—	—	4.76	—
Lynn	68,218	18	6	11.11	11.11	5.55	—	—
Somerville	64,394	16	3	12 50	12.50	12.50	—	—
Lawrence	59,072	16	5	6.25	6.25	—	—	6.25
Springfield	58,266	22	7	20.75	8.30	—	4 15	12.45
Holyoke	44,510	13	4	7.69	7.69	—	—	7.69
Brockton	38,759	9	1	22.22	—	11.11	—	—
Salem	37,723	16	7	12.50	—	—	6.25	—
Malden	36,421	7	—	—	14.28	—	—	—
Chelsea	34,235	8	1	—	—	—	—	—
Haverhill	32,651	2	—	—	—	—	—	—
Gloucester	31,426	6	3	16.66	—	—	—	—
Fitchburg	30,523	8	1	25.00	—	12.50	—	—
Newton	30,461	8	2	12.50	12.50	12.50	—	—
Taunton	28,327	11	4	—	—	—	—	—
Everett	28,102	5	1	20.00	—	—	—	—
Quincy	24,578	—	—	—	—	—	—	—
Pittsfield	23,421	8	2	—	25.00	—	—	—
Waltham	22,791	3	1	—	33.33	—	—	—
North Adams	21,883	4	—	25.00	25.00	—	25.00	—
Chicopee	18,316	4	3	25.00	—	25.00	—	—
Medford	17,190	2	1	—	—	—	—	—
Newburyport	15,636	3	1	—	—	—	—	—
Melrose	14,721	4	—	—	—	—	—	—

Deaths reported 1,866; under five years of age 607; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 230, consumption 230, acute lung diseases 229, diphtheria and croup 67, diarrheal diseases 56, typhoid fever 52, whooping-cough 17, cerebro-spinal meningitis 11, scarlet fever 11, measles 11, erysipelas 3, small-pox 2.

From whooping-cough New York 11, Pittsburg 2, Boston, Providence, Gloucester and Fitchburg 1 each. From cerebro-spinal meningitis New York 6, Providence, Brockton and Everett 1 each. From scarlet fever New York 9, New Bedford 2, Lynn

1. From measles New York 9, Providence and Springfield 1 each. From erysipelas Washington, New Bedford and Salem 1 each. From small-pox New York and Everett 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 28th, the death-rate was 21.1. Deaths reported 4,623: acute diseases of the respiratory organs (London) 478, diphtheria 130, measles 98, fever 93, diarrhœa 89, whooping-cough 37, scarlet fever 36, small-pox (Hull) 4.

The death-rates ranged from 10.1 in Cardiff to 29.7 in Bristol: Birmingham 20.5, Bradford 21.0, Gateshead 20.6, Huddersfield 14.1, Hull 19.8, Leeds 22.1, Liverpool 27.7, London 21.1, Manchester 24.4, Newcastle-on-Tyne 20.8, Nottingham 19.6, Portsmouth 19.1, Sheffield 27.3, Sunderland 23.3, West Ham 18.9.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 11, 1899.

R. G. BRODRICK, passed assistant surgeon, ordered to Washington, D. C., November 17th, for examination for retirement and then home and to wait orders.

O. D. NORTON, surgeon, detached from the "Ranger" and ordered to the "Monadnock," *via* the "Solace."

R. K. SMITH, passed assistant surgeon, detached from the Naval Hospital, New York, and ordered to the Naval Hospital, Mare Island, Cal.

O. M. EAKINS, assistant surgeon, ordered to the Naval Academy.

W. M. WHEELER, assistant surgeon, ordered to the Naval Hospital, New York.

H. E. ODELL, assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the "Ranger."

R. A. MARMION, medical director, promoted to medical director.

M. H. SIMONS, medical inspector, promoted to medical inspector.

L. G. HENEBERGER, surgeon, detached from the "Indiana," November 10th, and ordered home and to wait orders.

W. A. MCCLURG, ordered to the "Indiana," November 10th.

G. D. COSTIGAN, passed assistant surgeon, promoted to passed assistant surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING NOVEMBER 9, 1899.

BANKS, C. E., surgeon. Upon expiration of leave of absence to proceed to Boston, Mass., as inspector of unserviceable property. October 28, 1899.

PERRY, T. B., passed assistant surgeon. To proceed to Titusville, Fla., for special temporary duty. October 28, 1899.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Atlanta, Ga., and report to the Governor of the State for special temporary duty. October 28, 1899.

BLUE, RUPERT, passed assistant surgeon. Relieved from duty at Portland, Ore., and directed to proceed to New York, N. Y. (Immigration Depot), for temporary duty. November 2, 1899.

VOGEL, C. W., assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to New York, N. Y. (Stapleton), for duty and assignment to quarters. October 30, 1899.

DUDLEY, D. E., acting assistant surgeon. Granted leave of absence for thirty days. October 31, 1899.

KENAN, SPALDING, acting assistant surgeon. Granted leave of absence for six days. October 28, 1899.

CARTER, H. R., surgeon. To proceed to Miami, Fla., for special temporary duty. November 9 1899.

SMITH, A. C., passed assistant surgeon. Relieved from temporary duty at the Tortugas Quarantine Station and directed to proceed on steamer "Powhatan" to the Reedy Island Quarantine Station. November 3, 1899.

NYDEGGER, J. A., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. November 3, 1899. Granted leave of absence for six days. November 6, 1899. To proceed to Cadiz, Spain, for duty. November 6, 1899.

SPRAGUE, E. K., passed assistant surgeon. Granted leave of absence for two days. November 3, 1899.

GREENE, J. B., assistant surgeon. Granted leave of absence for twenty-one days. October 28, 1899.

TABB, S. R., assistant surgeon. To rejoin station at Savannah, Ga. November 8, 1899.

ANDERSON, J. F., assistant surgeon. Granted leave of absence for four days. November 3, 1899. To proceed to Barcelona, Spain, for duty. November 6, 1899.

FRICKS, L. D., assistant surgeon. Relieved from special temporary duty at Key West, Fla., and directed to proceed to Miami, Fla., for temporary duty. November 6, 1899.

SCHERESCHEWSKY, J. W., assistant surgeon. To report to Surgeon L. L. WILLIAMS, Immigration Service, New York, N. Y., for assignment to duty. November 3, 1899.

LORD, C. E. D., assistant surgeon. To report to medical officer in command, New York, N. Y. (Stapleton), for temporary duty and assignment to quarters. November 3, 1899.

GREGORY, G. A., acting assistant surgeon. Granted leave of absence for five days. November 6, 1899.

MONCURE, J. A., acting assistant surgeon. Granted leave of absence for thirty days from November 15th. November 3, 1899.

GOODMAN, F. S., hospital steward. Granted leave of absence for thirty days from December 1st. November 9, 1899.

PROMOTION.

J. B. GREENE, assistant surgeon, commissioned as passed assistant surgeon. November 2, 1899.

APPOINTMENTS.

JOS. W. SCHERESCHEWSKY, of Massachusetts, and CHARLES E. D. LORD, of Maine, commissioned as assistant surgeons. November 2, 1899.

APPOINTMENT.

M. MANGES has been appointed to the professorship of diseases of the chest and general medicine in the New York Polyclinic, which was made vacant by the death of Dr. R. C. M. Page.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 20th, at 8 o'clock.

Dr. Richard C. Cabot, "A Clinical Study of 168 Cases of Valvular Heart Disease."

Dr. Walter E. Paul: "Epilepsy: Diagnosis, Prognosis, Treatment."

A. K. STONE, M.D., *Secretary*, 637 Boylston St.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, November 22, 1899, at 8 P. M.

Papers: Dr. Frederick W. Johnson, "Steam in the Treatment of Chronic, Hyperplastic and Senile Endometritis, Putrid Abortion and Puerperal Sepsis."

Paper: Dr. W. M. Conant, "Tumors of the Female Bladder, and Report of a Case of Papillary Angio-Sarcoma."

R. A. KINGMAN, M.D., *Chairman*.
C. H. HARE, M.D., *Secretary*.
285 Marlborough Street.

RECENT DEATHS.

CHARLES H. HOLZHAUSEN, M.D., one of the physicians of the outdoor department of Bellevue Hospital, died on November 4th, of typhoid fever. He was twenty-nine years of age, and a graduate of the College of the City of New York and of Bellevue Hospital Medical College.

EDWARD BLEECKER, M.D., the most prominent practitioner of medicine in the Borough of Queens, died on November 5th, of pneumonia complicating cirrhosis of the liver, at his home in Whitestone, L. I. He was born in Albany in 1844, and was graduated from the College of Physicians and Surgeons, New York, in 1865. He first served as a surgeon at the State Barracks at Albany, where several thousand sick and wounded soldiers were quartered, and afterwards went to the New York Quarantine Station on Staten Island as assistant to Health Officer Swinburne. The greater part of his professional life was spent at Whitestone, where he was a member of the Board of Education for twenty-five years.

WALTER M. HOFFMAN, M.D., formerly United States Consul at Manheim, Germany, died in Reading, Pa., recently, aged fifty-three years. He was formerly connected with the Smithsonian Institution, and before that with Western scientific expeditions. He received decorations from a number of foreign rulers and scientific bodies. He was a surgeon in the Franco-German War.

BOOKS AND PAMPHLETS RECEIVED.

A Text-book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D. (Aberd.), Professor of Materia Medica and Therapeutics in the University of Michigan; formerly Thompson Fellow in the University of Aberdeen and Assistant in the Pharmacological Institute of Strasburg. Illustrated with 47 engravings. Philadelphia and New York: Lea Brothers & Co. 1899.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Vol. III., September, 1899. Diseases of the Thorax and its Viscera, including the Heart, Lungs and Blood-vessels; Diseases of the Skin; Diseases of the Nervous System; Obstetrics. Philadelphia and New York: Lea Brothers & Co. 1899.

Original Articles.

TYPHOID FEVER AT THE MASSACHUSETTS GENERAL HOSPITAL DURING THE PAST SEVENTY-EIGHT YEARS. MORTALITY; INTESTINAL HEMORRHAGE; PERFORATION; RELAPSE.[1]

BY REGINALD H. FITZ, M.D., BOSTON.

The recognition in this country of typhoid fever as an independent disease and its identification with the typhoid fever of Paris were the outcome of investigations carried on at the Pennsylvania Hospital in Philadelphia and at the Massachusetts General Hospital in Boston. The discoveries in the first quarter of this century of the French pathologists, above all, of Louis, received but little attention from the American physicians of that period. In fact, the observations on typhoid fever of this eminent physician were known to James Jackson, professor of the theory and practice of physic in Harvard University, only through a review in the *Edinburgh Medical and Surgical Journal* for 1830, until the return from Paris, three years later, of his son, James Jackson, Jr. This gifted young physician, in the words of Dr. Osler, "the young Marcellus among the physicians of the country," between 1831 and 1833 was a fellow-student in Paris of William W. Gerhard, and Casper W. Pennock, both of Philadelphia. These young men became devoted followers and admirers of Louis. Jackson, in particular, came into such intimate personal relations with him as to look upon him as a second father. Louis has placed on record the warmth of his friendship for the younger Jackson and his thorough appreciation of his exceptional talent for the observation of disease. Dr. Gerhard, soon after his return to Philadelphia in 1833, received the appointment of resident physician in the Pennsylvania Hospital, occupying this subordinate position for the purpose of devoting himself for a while to medical research. The results of his investigations in typhoid fever were published in the following year.[2] James Jackson, Jr., within two weeks after his return from Paris, closely studied the cases of disease in the Massachusetts General Hospital (both in the wards and in the autopsy-room) until he was taken sick with typhoid fever. Soon after recovery from this disease he died of dysentery, early in 1834, just as he was about to begin the practice of medicine in Boston. Although his opportunity of active research at the hospital was limited to a few weeks only, his influence seems to have been the most powerful factor in bringing about, both in the hospital and in New England, the more exact knowledge of the nature of typhoid fever. Until his return the examination of the intestines in this disease was not properly conducted; indeed they were most frequently left unopened. Within six weeks after his investigations were begun the evidence obtained with regard to typhoid fever was strongly corroborative of the observations of Louis. "He found that this disease exhibited in the living and in the dead the same characters which his master had so accurately delineated."[3]

The names of two other Bostonians, Drs. Bowditch and Shattuck, also pupils of Louis, and who eventually became physicians to the Massachusetts General Hospital, likewise were intimately connected with the early history of typhoid fever. Henry I. Bowditch in 1832 was a fellow student in Paris of the younger Jackson and shared in his enthusiastic admiration for Louis. He translated the "Recherches Anatomiques" of this author,[4] and thus in 1836 opened to most of the practitioners of the United States and of the British Kingdom what hitherto had been a sealed book. Geo. C. Shattuck, Jr., was sent to England by Louis in 1838 to observe the cases of continued fever in that country, all of which were then regarded as the one affection, typhus, with the view of determining to what extent they resembled and differed from those occurring in Paris. He found examples of both typhus and of typhoid fever and reported that the latter disease in England was identical with the one observed by Louis in France. His investigations were communicated to the Society for Medical Observation in Paris and were published subsequently in Philadelphia.[5]

The influence of James Jackson, Jr.'s, work at the hospital was first made evident in June, 1838, when his father presented to the Massachusetts Medical Society a "Report founded on the Cases of Typhoid Fever, or the Common Continued Fever of New England, which occurred in the Massachusetts General Hospital from the Opening of that Institution in September, 1821, to the End of 1835."[6]

The number of cases serving as the basis of this report was 303, but reference to the records of the hospital during this period shows that they were entered as *typhus, enecia, enecia typhus, enecia synochus* and *enecia cauma*. These diagnoses at some later period were overwritten by the term typhoid fever. Dr. Jackson, in the paper now under consideration, was led, "after much hesitation," to use the term typhoid fever through the influence of Dr. Gerhard, although he had recognized in 1833 the identity of the continued fever of Boston with that described by Louis.

During the earlier part of the period covered by the report Dr. Jackson thought that in most cases the early use of active remedies, especially of antimony, would diminish the violence of the fever and, in many instances, would arrest it.[7] In almost all the patients, therefore, "vomiting or full purging or both, were induced by medicine, in the first or second week of the disease."[8] After 1881 emetics were used much less frequently than before, although but few patients were allowed to go without a cathartic, and between 1883 and 1835 cathartics were not used as often after the first day in a large proportion of the cases. Mercurials, almost exclusively calomel, were employed during the first or second week until the mouth was made sore, but after 1830 their use almost entirely ceased.

In 1838, however, doubts arose, especially in the mind of one of his colleagues, as to the benefit of any continued active treatment. Notwithstanding these doubts, Dr. Jackson, from 1838 to 1835, during

[1] Read before the New York State Medical Association, October 25, 1899.
[2] American Journal Medical Sciences, 1834, xv, 32.
[3] Memoir of James Jackson, Jr., M.D., 1835, p. 40.
[4] Anatomical, Pathological and Therapeutic Researches on Gastro-enterite, Putrid, Adynamic, Ataxic or Typhoid Fever. By P. Ch. A. Louis. Translated by Henry I. Bowditch, M.D. Two vols., 1836.
[5] Medical Examiner, 1840, iii, 133.
[6] Medical Communications, Massachusetts Medical Society, 1841, vi, 79.
[7] Memoir, p. 41.
[8] Report, p. 91.

the first week of the disease, usually prescribed tartar emetic every two hours in constantly increasing quantity, until it was ascertained how large a dose the patient could bear. It was found that from one-half a grain to four grains thus could be taken without any important effect upon the stomach or bowels. Bleeding was used in one-fifth of the cases, not as a remedy for the disease, but always with reference to particular symptoms, and opium was given to check diarrhea and cough, to procure sleep, and to alleviate pain.

Dr. Jackson concluded, apparently by deduction according to the numerical method of Louis, that at the onset of typhoid fever the patient should receive an emetic, followed by a cathartic, or the two should be given in combination. If the vomiting and purging were not followed by great relief, venesection was to be practised on the following day unless the patient's constitution was very feeble or the attack mild. If the disease did not subside after the evacuations, tartar emetic was to be given every two hours in increasing doses, the bowels being kept open in the meantime. It was advised that calomel should enter into the medicines used for this purpose. Evacuations, at least vomiting and purging, might be resorted to in the second week, and some benefit might be obtained if the use of small doses of antimony was begun in this week. After the second week no active treatment was to be employed, at all events none which would cause any serious inconvenience to the patient.

As a result of Dr. Jackson's experience, but not capable of being demonstrated by the numerical method, was his adherence to the mildest articles of liquid diet until the patient was "fully reinstated." Then extra food was allowed cautiously, the caution being the more necessary the earlier the return of the appetite. Vinous liquors might be tried if desired by the patient when greatly enfeebled at a late stage of the disease.

In the following year, 1839, Enoch Hale, attending physician of the hospital, also addressed the Massachusetts Medical Society on the subject of typhoid fever.[9] His paper was based chiefly upon his experience at the hospital from October 1833 to 1839, during which years 197 cases had been admitted. The former date was selected since it represented the time at which especial attention began to be directed to the study of the symptoms and lesions of this affection. He stated that the knowledge of the disease of Peyer's glands in typhoid fever "serves to guard us especially against inappropriate, irritating medicines, such as were formerly in use, in the expectation of arresting the progress of the fever. . . . Up to a very recent period, if it be not so in some places even now, it was a common practice to give not only antimonials, but irritating cathartics, not only occasionally to evacuate the intestines, but daily, and several times a day, to 'break up' or arrest the progress of the disease, or to cure diarrhea by removing the supposed cause of irritation.[10] 'Hence the necessity of a mild and unstimulating diet during convalescence as well as during the more active period of the disease,' and 'most important . . . to abstain from attempting too much by active treatment.' . . . Violent, persevering efforts to arrest the disease, after it has fairly begun its course, cannot be successful. They may do much harm by increasing the irritation and inflammation; but it is scarcely possible that they can do good. We may allay the general irritability of the system, we may watch against the attack of unfavorable symptoms, we may soothe the irritated state of the intestinal canal, and, sometimes, perhaps moderate the severity of its local inflammation, and thus contribute greatly both to the comfort and the restoration of our patient. In the beginning of disease, before the process of inflammation is fully established, we may, perhaps do more, and by early removing the causes of irritation, prevent its formation, and cut short its course. It is only then that active remedies can be used with benefit, or even with safety. If persevered in at a later period, they may exhaust the patient, but they will not subdue the disease." [11]

During the past sixty years the treatment of typhoid fever at the hospital has not varied materially from the plan pursued by Dr. Hale and his colleagues. For the purpose of more exact information with regard to the modifications in carrying out this plan and their results, my former assistant, Dr. Louis W. Gilbert, has undertaken the laborious task of examining the original records. He has prepared the accompanying table, which shows the mortality in successive years and the frequency of intestinal hemorrhage, perforation and relapse. The results of this investigation are presented for your consideration.

Year.	No. cases.	Deaths.	Mortality Per cent.	Hemorrhage.	Per cent.	Perforations.	Per cent.	Relapses.	Per cent.
1821									
1822	1								
1823	5								
1824	15	3	20						
1825	18	2	11.1						
1826	26	3	11.5						
1827	19	3	15.7						
1828	22	2	9						
1821-1829	106	13	12.2						
1829	25	1	4						
1830	14	4	28.5						
1831	29	2	6.8						
1832	23	4	17.3						
1833	37	6	16.2						
1834	34	6	17.6						
1835	35	6	17.1						
1836	59	6	10.1						
1857	29								
1838	20	1	5						
1829-1839	305	36	11.8						
1839	33	4	8.3						
1840	40	7	17.5	1	2.5				
1841	11	1	9.1						
1842	15	1	6.6						
1843	15	4	26.6						
1844	38	7	18.4						
1845	36	4	11.1						
1846	29	1	3.4						
1847	90	5	5.5	2	2.2				
1848	53	6	11.3						
1839-1849	360	40	11.1	3	.8				

[9] Remarks on the Pathology of the Typhoid Fever of New England as exhibited in its Physical Signs, and its Anatomical Appearances. Medical Communications, Massachusetts Medical Society, 1841, vi, p. 183.

[10] Loc. cit., p. 253.

[11] Medical Communications, Massachusetts Medical Society, 1841, vi., p. 255.

Year.	No. cases.	Deaths.	Mortality Per cent.	Hemorrhage.	Per cent.	Perforations.	Per cent.	Relapses.	Per cent.
1849	36	5	13.9	2	5.5				
1850	32	5	15.6						
1851	37	7	18.9	3	8.1				
1852	31	6	19.3						
1853	32	5	15.6	2	6.2				
1854	32	4	12.5	1	3.1				
1855	36	1	2.8			1	3.1		
1856	22	3	13.6						
1857	33	9	27.2	1	3.3				
1858	27	6	22.2	1	3.7	1	3.7		
1849–1859	318	51	16	10	3.1	2	.6		
1859	55	5	9	1	1.9				
1860	28	4	14.3	1	3.5				
1861	41	4	9.7						
1862	19	4	21.5	1	5.2				
1863	42	9	21.4	3	7.1				
1864	33	3	9	1	3.3				
1865	24	6	25						
1866	23	2	8.7						
1867	16	3	18.9			1	6.2		
1868	20	8	40					1	5
1859–1869	301	48	15.9	7	2.3	1	.3		
1869	31	4	12.9					1	3.2
1870	50	7	14	1	2			3	6
1871	41	13	31.7	2	4.8	2	4.8		
1872	45	5	11.1	1	2.2	1	2.2	2	4.4
1873	37	9	24.3	1	2.7			2	5.4
1874	27	3	11.1	1	3.7			2	7.4
1875	46	5	10.9	1	2.2			6	13.2
1876	39	6	15.4	4	10.2	1	2.5	6	15.4
1877	23	1	4.2	1	4.2			4	16.8
1878	16	5	31.2					5	31.2
1869–1879	355	58	16.6	12	3.4	4	1.1	31	8.7
1879	23	5	21.7	1	4.3			1	4.3
1880	52	4	7.7	2	3.8			7	13.4
1881	75	17	22.7	2	2.4			9	12
1882	56	10	17.8	5	8.9			4	7.1
1883	63	13	20.1	4	6.3	1	1.5	8	12.7
1884	74	17	22.9	4	5.4			14	18.9
1885	90	12	14.2	3	3.3			10	11.1
1886	84	12	14.3	2	2 3	1	1.1	16	25
1887	161	20	12.3	6	3.7			23	14.3
1888	115	17	14.7	11	9.5	1	1.1	16	13.9
1879–1889	793	127	16	40	5	3	.3	108	13.6
1889	119	13	10.9	11	9.1	4	3.3	17	14.2
1890	68	6	8.8	6	8.8			8	11.7
1891	98	16	16.3	8	8.1	2	2	8	8.1
1892	92	13	14.1	5	5.4			7	7.6
1893	81	9	11.1	4	4.9	2	2.4	9	11.1
1894	89	16	17.9	14	15.9	4	4.4	8	6.9
1895	88	16	18.1	12	13 6	1	1.1	10	11.4
1896	120	13	10.8	7	10.8	1	1.5	23	19.1
1897	86	11	12.8	11	12.8	2	2.3	4	4.6
1898	159	22	13.2	12	7.5			19	11.9
1889–1899	1,000	135	13.5	90	9	16	1.6	113	11.3

Totals, 1821–1899: Number of cases 3,538; deaths 509; mortality per cent. 14.3.

For the entire period of seventy-eight years but one volume of the clinical records of the medical cases is missing, namely, Volume CCCI, covering a part of the year 1871. The number of patients with typhoid fever assigned to this year, therefore, is, probably, somewhat smaller than was actually the fact, and the data obtained for 1871 are less valuable for purposes of comparison than would have been the case were the missing volume at hand. The table includes only those cases of typhoid fever which were treated in the hospital for a longer period than two days. Convalescents from typhoid, admitted for the purpose of recovery from the effects of the disease, are not entered in the lists. With these exceptions the total number of patients included is 3,127 from 1839 to 1899, and 3,538 from the admission of the first patient in 1821 to the year 1899. The average mortality for the seventy-eight years from the opening of the hospital is 14.3 per cent., and for the past sixty years it is 14.7 per cent. The percentage of mortality in successive decades does not differ widely from the above figures, as appears from the following statement:

Decade.	Mortality.
1829 to 1839	11.8%
1839 " 1849	11.1 "
1849 " 1859	16 "
1859 " 1869	15.9 "
1869 " 1879	16.6 "
1879 " 1889	14.7 "
1889 " 1899	13.5 "

The years of low mortality were, 1837, no deaths; 1835, 2.8 per cent.; 1846, 3.4 per cent., and 1877, 4.2 per cent. On the other hand, years of unusually high mortality were 1843, 26.6 per cent.; 1857, 27.2 per cent.; 1878, 31.2 per cent. and 1868, 40 per cent. That these variations were independent of any sudden changes in treatment will appear from contrasting them with the mortality in contiguous years. Although in 1855 the mortality was only 2.8 per cent., in 1854 it was 12.5 per cent., and in 1856 it was 13.6 per cent., while in 1857 it was 27.2 per cent. In 1877 the mortality was 4.2 per cent. and in 1878 it was 31.2 per cent. The highest mortality in any one year was 40 per cent. in 1868, but in 1867 it was 18.9 per cent. and in 1869 it was 12.9 per cent.

Such variations in mortality and an appreciable prolongation of the period of convalescence led Dr. Jackson, in 1838, to question whether the increased mortality and the prolonged convalescence during the period of radical changes in the treatment from 1833 to 1835 inclusive were due to the greater severity of the disease or to the less active treatment during this period. It would appear from his concluding advice that he preferred to return to the more active treatment to which he had long been accustomed than to recommend the blander methods preferred by some of his colleagues, and of which he had made a trial for a number of years. Dr. Hale,[12] on the contrary, in the following year answered Dr. Jackson's query by stating that during the three years subsequent to the period included in Dr. Jackson's report the treatment was perhaps even milder than ever before. Although the mortality from 1833 to 1835, inclusive, was from 16 per cent. to 17 per cent., it fell to 10 per cent. in 1836. In 1837 there were no deaths; in 1838 the mortality was 5 per cent. and the average mortality for the three years was in the vicinity of 6 per cent. The higher mortality of the earlier years was attributed, therefore, by Dr. Hale to the difference in the severity of the disease at different periods.

Although the study of the mortality table makes it doubtful if modifications of treatment carried on at the hospital have produced any essential change in the death-rate, it is desirable to consider this question from the other side and inquire what changes, if any, have followed alterations of treatment.

[12] Medical Communications, Massachusetts Medical Society, 1841, vi, p. 254.

For the thirty years after the publication of Dr. Hale's paper, namely, from 1839 to 1869, the diet of the patients was liquid, the fluids often containing some farinaceous ingredient. From 1869 to 1879 beef tea and beef juice were largely used in addition to the milk, and from 1879 to 1899 the liquid portion of the diet has been chiefly milk. Between 1893 and 1898 the patients under the care of Dr. F. C. Shattuck have received, in addition to the milk, minced meat, raw and soft-boiled eggs, macaroni, soft crackers, toast and puddings. Patients under the care of Dr. E. G. Cutler during a like period have been fed on skim milk, buttermilk, eggs and milk, albumin water, chicken broth, and beef juice with barley water. The mixed foods were so strained as to be freed from solid particles.

During the thirty years of liquid, farinaceous diet, the average mortality was 14.1 per cent. In the milk and beef-tea decade it was 16.6 per cent., although in the immediately preceding liquid, farinaceous decade it was 15.9 per cent. From 1879 to 1899, among those patients using milk as the principal article of food, the mortality was 14.6 per cent., which was about the same as during the period of liquid, farinaceous diet. The mortality was only 11.3 per cent., however, among the patients between 1893 and 1898 who were fed upon the liquid and soft-solid diet prescribed by Dr. Shattuck. This mortality compares very favorably with that of 15.1 per cent. noted among the patients using a largely milk diet, and with the 16.6 per cent. mortality occurring among patients taking strained, starchy and proteid fluids.

Since 1839 emetics and purgatives have no longer been in use and antimony has been discontinued. Calomel has been employed only occasionally in the decade following 1838, and again in 1887, when ten grains of calomel were given as a matter of routine to about one-half of the patients when they entered the hospital. The treatment in general use consisted of an alkaline fever mixture, mild laxatives or chalk mixture and laudanum, as the condition of the bowels might demand. After 1868 rectal enemata instead of laxatives by the mouth were used when a movement of the bowels was desired. In 1878 quinine and other antipyretic drugs were added to or substituted for the alkaline fever mixtures, and were used with greater or less frequency during the subsequent ten years. The external use of water in the treatment was begun in 1873. At first some of the patients were sponged with tepid water two or three times daily. From 1878 to 1888, however, the frequency of the sponging was increased to six or eight times a day, and the temperature of the water was often as low as 65° F. Since 1888 sponge baths and tub baths, at a temperature of 65° F. and upwards, have been in constant use as often as every four hours when the temperature of the patient was 102.5° F. As the average mortality from 1878 to 1888 was 16 per cent., and that from 1888 to 1898 was 13.5 per cent., it is evident that a definite lowering of the rate has taken place during this period of cold-water treatment. It does not follow, however, that this change for the better was due to the use of cold water, since a lowering of the mortality of even 5 per cent. in successive decades took place between 1839 and 1859, wholly independent of any obvious modification of treatment. It remains to be learned whether the external use of cold water and the changes in diet have been attended with variations in the occurrence of such complications of typhoid fever as intestinal hemorrhage, perforation and relapse.

In the earlier years of the hospital, patients with typhoid fever were allowed to walk to the closets for the purpose of emptying the bowels; hence, presumably, the occurrence of hemorrhage from the intestine was often overlooked. Notwithstanding this fact, Dr. Jackson [13] notes 10 per cent. of hemorrhage from the bowels in his series of 303 cases.

From 1849 to 1899 the occurrence of intestinal hemorrhage is recorded in 159 cases out of 2,767 patients, a ratio of 5.7 per cent. The extremes in the decades here included are 2.3 per cent. from 1859 to 1869 and 9 per cent. from 1889 to 1899. The table shows that during the last twenty years, and especially during the past ten years, hemorrhage from the bowels has been much more frequent than during the previous twenty years. Indeed, the average occurrence has been nearly as high in the past ten years as during the days of emetics and the active use of purgatives. That this is not a question of consistence of food appears probable from the study of the records between 1893 and 1899. In this period the frequency of intestinal hemorrhage among patients living chiefly on a milk diet was 10.6 per cent; among those fed upon strained proteid and amylaceous fluids it was 16 per cent., while it was only 9 per cent. among the patients living upon fluids and soft solids. The inference from this comparison is: A diet of soft solids not only does not provoke intestinal hemorrhage, but also rather lessens the tendency to this complication. On the other hand, a strained mixed diet may increase somewhat the frequency of hemorrhage.

In like manner the question of perforation of the intestine has been investigated. The difficulties in the way of determining the occurrence of this complication of typhoid fever are obvious to all physicians. Its presence is suggested by the onset of symptoms of peritonitis, and is made apparent by the discovery of the perforation after a laparotomy or at a post-mortem examination. The symptoms of perforation may exist, however, and no perforation be found at a laparotomy or after death. Perforation, indeed, may have taken place and no characteristic symptoms have announced its occurrence. Bearing in mind these difficulties, all the cases of suspected perforation have carefully been scrutinized, and those instances only admitted to the table in which the perforation was demonstrated, or the clinical evidence was of the strongest possible nature. It is only within the past thirty years that the data were considered sufficient to permit comparisons to be made. From 1869 to 1879 the average frequency of perforations was 1.1 per cent., from 1879 to 1889 it was 0.3 per cent., and from 1889 to 1899 it was 1.6 per cent. These differences are so slight as to make it doubtful if diet or treatment has had any effect in modifying the tendency to this grave complication of typhoid fever. Of 10 patients with perforation between 1893 and 1897, five, or 2.8 per cent., were using a largely milk diet; two, or 1.8 per cent., strained liquid diet; and three, or 3.4 per cent., were fed upon liquid and soft-solid diet.

Any accurate observation concerning the frequency of relapse has been made trustworthy only since the introduction of the thermometer in the study of disease. Careful thermometric records have been made

[13] Report, p. 117.

at the hospital since 1869. From 1869 to 1879 the average frequency of relapse was 8.7 per cent.; from 1879 to 1889 it was 13.6 per cent., and from 1889 to 1899 it was 11.3 per cent. The average for the thirty years is 11.2 per cent. It may be that the increased frequency during the past twenty years is due largely, as has frequently been maintained, to the hydriatric treatment of the disease.

The possible influence of diet has also been considered. Under the largely milk diet the ratio of relapse was 13.1 per cent. It was 11.1 per cent. among patients living upon the strained proteid and amylaceous diet, and 10.2 per cent. among patients fed on fluids and soft solids. Relapses thus were rather more frequent among patients living upon a largely milk diet.

The conclusions reached from this study of the records of the Massachusetts General Hospital for the past seventy-eight years are as follows:

(1) The treatment of typhoid fever does not differ in essentials from the principles laid down in 1839.

(2) The average mortality from this disease has not materially changed from the days of active treatment with emetics, purgatives, venesection, antimony and calomel down to the present time.

(3) Intestinal hemorrhage, perforation and relapse, upon the whole, are quite as frequent now as at any period in the history of the disease.

(4) A considerable variety in diet may be permitted not only without detriment, but also with possible benefit to the patient.

ON THE VALUE OF BLOOD EXAMINATIONS IN THE DIAGNOSIS OF CAMP FEVERS — A REPORT OF THE BLOOD EXAMINATIONS IN TYPHOID FEVER AND IN THE MALARIAL FEVERS.[1]

Cases occurring in the U. S. Army General Hospitals at Fort Myer, Va., and at Savannah, Ga.

BY J. J. CURRY, M.D.,
Acting Assistant Surgeon, U. S. A.

This report is simply a preliminary one, and only an abstract of the report which will appear later. Necessarily a paper like this can only treat of such a subject in a brief and unsatisfactory manner. There are several very important points, however, which it will give me an opportunity to bring out. If I can but impress forcibly and clearly on your minds, and on the minds of the medical profession at large, the great and vital importance of careful and systematic blood examinations in the diagnosis of fevers, especially those occurring in military camps, I shall have accomplished something.

It would seem that every intelligent medical man of this day must appreciate the value of such examinations in the differentiation of typhoid fever and the malarial fevers. We have had ample proof, both in civil and military life, that this is not so. Witness the number of deaths from typhoid fever, and the wide spread of this disease during the past year, both in civil and in military communities.

Confining ourselves to the military side, — that in which I have lived and worked for the past year, — let us consider the large number of cases of typhoid fever occurring in the various camps, and the number of deaths resulting therefrom. Statistics show that casualties of the army in action are few as compared with the deaths and disabilities caused by camp fevers.

When we stop to consider the great advance made in medical science during the past decade, and then look at our slight control over such widespread diseases as typhoid fever, we must be amazed. After all our progress in knowledge of the etiology and pathology of typhoid, have we gained in the same ratio in our ability to prevent this disease? No; we certainly have not. And why? Because the first cases of typhoid fever were not recognized and treated as such. Nowhere has this failure to recognize the disease been so forcibly illustrated as in the military camps during the war.

If the word "malaria" could have been eradicated from the vocabulary of the camp surgeon last summer, many lives would have been saved. It was due to the pernicious diagnosis of all fever cases as malaria, malaria, malaria, that typhoid fever became almost an epidemic in some of the camps.

We know positively from our experience in the past year that typhoid fever may spread throughout a military camp without any contamination of the water supply. At first the disease spreads slowly and gradually, but it grows on gaining and gaining, until it assumes the proportion of an epidemic. The investigations of the Surgeon-General's Commission on typhoid have proved this, and my own observation and study of cases brought to Fort Myer from Camp Alger, as well as my inspection of Camp Alger and of other camps, has confirmed it. If two cases, or, indeed, if one case of typhoid fever occurs in a command and is followed by another case, then is the time to act, to prevent an epidemic. The Sanitary Commission, appointed on the recommendation of the Surgeon-General of the Army, General Sternberg, will show in its report that if the first cases are recognized, typhoid-fever readily succumbs to strict hygienic measures and *morale* of camp.

In his address on the "Sanitary Lessons of the War," delivered before the American Medical Association, at Columbus, O., a short time ago, the Surgeon-General of the Army, Dr. Geo. M. Sternberg, says: "This failure to recognize typhoid fever during its earlier stages, an error in diagnosis made on a very extensive scale during the Civil War, has been made on an equally extensive scale by the surgeons of the British Army on duty with troops in India, and is still being made by a majority of the practitioners of medicine in certain parts of our own country." And again in the same address General Sternberg says: "I consider it my duty to speak plainly with reference to one of the principal causes of the epidemic prevalence of typhoid fever in our camps. As a rule this disease was called by some other name by the medical officers on duty with regiments, who first saw the cases. Usually it was assumed to be malarial fever, and was treated as such until the patient became so sick that it was found necessary to send him to the division field hospital or to a general hospital. This general statement is based upon the carefully made investigation of a board of medical officers appointed on my recommendation."

During the summer and fall of 1898, I was attached to the United States Army General Hospital at Fort Myer, Va., only a few miles distant from Camp Alger. I was on duty as pathologist to the General Hospital. My duty was to investigate all cases

[1] Read before the Massachusetts Medical Society, Boston, June 14, 1899.

received and to establish, if possible, an accurate diagnosis in each and every case. In this work it is a pleasure to acknowledge the assistance and encouragement of the Surgeon-General of the Army and of the commanding officer of the General Hospital, Wm. B. Davis, major and surgeon, United States Army.

We received some 800 cases from Camp Alger alone, from the camp at Jacksonville, Fla., by way of hospital train, some 135 patients, 50 from Knoxville, Tenn., some 240 from Camp Meade, Pa., about 250 from Santiago by way of Montauk, L. I., and a number from various other camps. In all something over 1,600 patients were treated at Fort Myer. Of these 1,600 cases, the great majority of all were fever cases; practically all doubtful cases and a good part of the entire number had careful blood examinations made upon them. Not only this, but I saw every case personally, diagnosed malaria and made careful blood examination not only for the plasmodium but for the "Widal." It was part of the routine work to take a specimen of fresh blood at the same time as specimen taken for Widal's test. This fresh-blood specimen was examined immediately for the malarial parasite and roughly whether there was any marked leucocytosis or not. These examinations were repeated often in negative cases. In all I made something over 1,000 Widal tests and fully as many examinations of fresh blood for malaria and for leucocytosis.

It is a most remarkable thing that of all the blood examinations made from the soldiers coming from Camp Alger, Jacksonville, Knoxville and Camp Meade, that is, men who had not been to Cuba, I failed to find a single malarial parasite during the months July to October. From this we cannot say that not a single case of malaria existed in the camps last summer and autumn, but it does show that malaria must have been very uncommon in these military camps. Mild cases of malaria might have come to Fort Myer so under the influence of quinine that it was impossible to find the parasite, but it is entirely improbable that there could have been more than a very few of even very mild cases, for not only was there no microscopical evidence but no clinical evidence of malaria among these men coming from the camps (save those from Montauk) in the United States during this time.

On the other hand, among the soldiers from Camp Wikoff, Montauk, L. I. (all men from the Fifth Corps from Santiago) malaria was the rule; typhoid fever not so common. The cases of typhoid brought to Fort Myer from Camp Alger, Va., from Jacksonville, Fla., and Knoxville, Tenn., were diagnosed by their regimental surgeons as malaria in the great majority of instances. Practically all of them had been treated to liberal doses of quinine. From Camp Meade, too, cases received later in the year, many bore the diagnosis of malaria. Among the number of soldiers of the Fifth Army Corps, coming from Montauk, some 250, only 10 were typhoid, and the majority of these came in with the same diagnosis of malaria. There was reason for this diagnosis in these cases, as most of them were combined typhoid fever and malarial fever. The accuracy of diagnosis of the cases from the Fifth Army Corps was remarkable, as the inaccuracy of the diagnosis of the regimental surgeons of Camp Alger and other camps was also remarkable.

It is clear now, even to the most unthinking layman, that the great, vital, important thing is the early recognition of the first cases of typhoid fever as such. How can this be done? Only by the careful examination of the blood in all cases of fever occurring in camp, no matter what they are supposed to be. By the blood examination we can detect these cases. When I say blood examination, I mean not only the performing of "Widal's test" but the examination of the fresh blood, both for malaria and for leucocytosis. Often the blood will not react to the Widal till the second or third week, and sometimes, uncommonly, not at all, but when we can eliminate malaria after repeated negative examinations for the plasmodium, and we have a case presenting clinically typhoidal symptoms, negative to malaria, and the blood showing no leucocytosis, we can almost make an absolute diagnosis of typhoid fever on this data alone. Our experience has shown that all such cases should be regarded as typhoid, and treated as such, until proved to be otherwise. But as the Widal reaction does occur in certainly 95 per cent. of cases, we have a means of detecting typhoid and of making the diagnosis sure beyond all doubt in the vast majority of cases. The clinical examination is of the greatest importance. It is a great mistake to separate the clinical and the pathological. They both go to make up the whole. The sum is complete only when they are joined It is equally incomplete if either is absent.

Perhaps I have dwelt too long on this side of my subject, so I will pass to a brief analysis of the results of my work. However important as is the clinical and scientific observation, I regard what I have already said as vastly more important, for what is the use of all our knowledge gained by investigations of so many workers if we fail to make practical application of it, or fail to show others the true value of it?

I wish here to call attention to the great value of fresh-blood examination in addition to "Widal's test." I do not think text-books and hematologists as a rule lay sufficient stress on its value. In our work in the military hospitals it was part of the routine examination to take a drop of blood as one does for examination for the malarial parasite and examine it fresh in every case. From the fresh blood we can learn so much: (1) we can determine the presence of the malarial parasite; (2) whether or no there is any leucocytosis, at least whether there is any marked leucocytosis; (3) the general character of blood, that is, approximately by the color of the red cells, any great diminution of hemoglobin, any poikilocytosis, fibrin formation, etc. By the examination of the fresh blood, while except in malaria and luekemia we cannot make an absolute diagnosis — it serves as a very valuable guide board directing our attention toward certain things. Thus if we have a leucocytosis and marked fibrin formation it suggests the possibility of a pneumonia, and we naturally make a careful clinical examination. We might possibly have in a case where leucocytes are increased an otitis media, a cerebro-spinal meningitis, or some other disease which a careful systematic examination will reveal, but the great value of it is that it stimulates and directs us to look and keep looking for the trouble. If we have no leucocytosis, no malarial parasite, and a continued fever, we naturally have suggested a typhoid, so, in brief, it is an exceedingly good guide board, directing our energies to a correct diagnosis.

The method used in performing "Widal's test" was

chiefly that by dried blood. The technique was the same as that used in the Army Medical Museum by Major-Surgeon Walter Reed, United States Army, Pathologist to Army Medical School, and his assistants. Upon starting my work at Fort Myer, I looked about and tried various techniques, and found that used by Dr. Reed to be best adapted to work in a general hospital, and giving excellent results. I carried along for some time the fluid serum method, dilution 1–10 and 1–20, with dried blood of the same patients, but the dried method was so much more easily done and the results so satisfactory that the fluid serum method was abandoned. It was in fact impracticable to carry along the examinations in such a large number of cases by the fluid method under the conditions existing there.

Dr. Reed's method.— Glass slides were used for collecting the blood instead of filter paper. These slides were labelled with patient's name, ward, date, etc. The ear was pricked by a surgical needle and three or four drops of blood placed on the slide a distance apart. These drops were allowed to dry a few hours to a day before being examined, as a rule. When dried, the edge of the drop was covered with distilled water by means of a platinum loop, and a watery extract of blood made on the slide by stirring with platinum needle, as one would mix a color on a painter's palette. The drop of water should be tinged a faint yellow; a drop of twenty-four-hour bouillon culture of bacillus typhosis is placed on a cover-glass and then a drop of the same size of this faintly yellow-tinged watery blood extract mixed with it (of course the platinum needle is sterilized in the flame at every step). This cover-slip is then inverted over a hollow slide, which has had the edges of the ring surrounded by a thin layer of vaseline. The hollow slide is numbered with a number corresponding with the one on the original slide containing the blood specimen, and the time of mounting noted also on the slide with a glass-marking pencil. The time limit is one hour, though the reaction, if it occurs, does so almost invariably in less than half an hour.

This method has the advantage of being a rapid and also a severe test. After a year's work and over 1,500 Widal tests by myself, I have never once obtained a reaction by this method that did not also give it with a dilution of at least 1–30 by the fluid serum method. Of course I did not do all the positive cases by the fluid serum method, but in a number of cases, where there was any doubt expressed as to diagnosis, I did the fluid method also, and in none of these cases did I fail to get a reaction in a dilution of 1–30 up. In hospital practice the slide has an advantage too, in that one may place a drop covered by a cover-slip for fresh-blood examination on the same slide, and, as I have stated above, learn a great deal from it. As an illustration, a request was made by a ward surgeon to me last fall while in charge of the laboratory at Fort Myer, for examination of the blood of a patient, a soldier, for malaria. Clinical diagnosis: Typhoid fever with malaria. This man was convalescing from typhoid, and had a rather sudden attack of chills accompanied by fever. Examination of the blood was negative for malaria, but showed a very marked leucocytosis. This suggested some acute infection, so I visited the ward, and upon examination found the man to have an acute follicular tonsillitis. Another case, similarly reported, was found to have an exudate on the tonsils extending up on the soft palate. Bacteriological examination showed the diphtheria bacillus.

If the slide is placed over a white surface while mixing the blood, one can readily detect the faint yellow tinge. It takes some little practice, but one soon learns to judge the right color. I tried several ways of estimating the amount of blood in the drop, in order to get somewhere near exactness in dilution, but was unable to find any method by which a large number of cases could be examined satisfactorily. There was some objection to every one. I did try taking up the blood by a platinum loop from the drop of blood hanging on the ear and transferring it to the slide, and then mixing the blood with water, using the same sized loop and placing drops of water around the blood drop and then mixing. If we could always get the same sized drop of blood we could then get a fairly exact dilution, but it is an almost impossible thing to do. I believe the method described as Dr. Walter Reed's is the most practical and satisfactory.

Results. — First, percentage of cases in which the Widal reaction occurred — 445 cases in which the final clinical diagnosis was typhoid fever. In this series I will only consider those cases which we had in the hospital during the acute part of the disease, that is, while they had fever. We received many from distant camps and civil hospitals, when they were convalescent and able to travel. These 445 cases represent those whose blood I examined during their illness at the general hospitals at Fort Myer, Va., and Savannah, Ga.; 353 came from the Second Army Corps from Camp Alger, 42 from Jacksonville and Knoxville and 50 from the camps about the general hospital at Savannah, Ga. Some of the diagnoses I am sure were not correct. The exclusion of these would bring the per cent. of positive results higher.

Out of these 445 cases, 417 gave a positive Widal test, 28 gave a negative result. In other words, 94 per cent., that is, practically 94 per cent., were positive and 6 per cent. negative. Of these 28 cases, only 13, which were examined two or more times, could be considered as probably typhoid fever. Of the other 15, seven were clearly not typhoid, and the remaining were examined but once. There was no good reason why the diagnosis of typhoid fever was allowed to stand in any of these latter cases. Taking out the seven cases clearly not typhoid, we have 21 negative and 417 positive results. This is certainly only fair. I might add to this that many undoubted typhoids did not have their blood examined, owing to the large amount of work on hand at the time. These were among the Camp Alger cases last summer, at a time when every medical officer at Fort Myer had all the work he could possibly attend to, and typhoid cases were being admitted daily in large numbers, so that the doubtful cases were given the preference in the examination. Undoubtedly if all typhoids could have been examined the positive percentage would be considerable more even than 95 per cent.

Negative side.— Of the 21 negative cases entered on the hospital register as typhoid fever and showing negative result to Widal, two cases died, one after severe hemorrhage and the other after severe diarrhea and cerebral symptoms; upon the latter case I performed a post-mortem. This is a most interesting case. This man, Catherman, private in Twenty-Second

Kansas Volunteer Infantry, came into hospital from Camp Alger with continued high fever, diarrhea, tympanitis, etc., apparently a typical typhoid; mental symptoms developed and there was low delirium, etc. His blood, examined many times for Widal, was negative; negative also for malaria and for leucocytosis. Blood examined the last time twelve hours before death with negative result. At post-mortem, typical typhoidal ulceration of ileum, corresponding to about end of third week; acute splenic tumor and acute mesenteric lymphatic hyperplasia. The typhoid bacillus was recovered from his spleen. I tried both his dried ante-mortem blood and his post-mortem blood with his own bacillus with negative results. The bacillus recovered from his spleen was agglutinated by all the specimens of typhoid blood I had. It behaved just the same as the stock culture, a culture obtained from the Army Medical Museum in Washington. I also tried his blood with a culture of the colon bacillus, obtained from Dr. Reed, of the Army Medical School, with negative result. This man also had pemphigus with his typhoid. Whether or not this would modify the reaction I do not know. I was unable to open the head of this case. The other bacteria were obtained in cultures.

The case of death due to hemorrhage was without doubt a typhoid, too. The last examination of blood in this case was, however, made some time before his hemorrhage. In connection with this case, it is interesting to relate our experience with the Widal in three other cases in which hemorrhage of the bowel occurred in course of typhoid. One, a soldier of the Ninth Massachusetts Volunteer Infantry, at Fort Myer, had typical symptoms of typhoid. Repeated examinations of blood showed negative Widal and negative malaria. Last examination, day before intestinal hemorrhage, was negative. The evening of the same day, after patient had severe hemorrhage, his blood gave a very prompt and marked Widal. This attracted my attention to such cases, and I found the same thing occurring in two others.

In addition to these 417 cases of typhoid in which the Widal test was obtained, I have the record of considerably over 500 cases of diseases other than typhoid in which the Widal test was made. In many of these cases the diagnosis was clear at the time the test was made. In others the test was made as part of the routine work for diagnosis. Of these 500 cases a small number gave Widal, but in every one of these positive cases a clear history of typhoid was obtained, save in one case; our negative results were therefore practically 100 per cent. Even in this case there might have been a mild typhoid in Cuba, instead of a malarial attack. The list includes many malarias, also small-pox, chicken-pox, amebic dysentery, yellow fever, meningitis and pneumonia.

Time of reaction.— I have not had the opportunity to go over and analyze carefully every case, and in many instances it is hard to fix the date of the beginning of the disease, but on the average the reaction appeared rather later than the time usually given by most observers. While we had four on the fourth day, and many between the seventh and tenth day, still, as many, I think, as 50 per cent. did not show reaction till the fourteenth day. In a number of cases it was the third week, and in several not until a relapse had occurred.

Persistence of reaction.— This, also, I have not had time to study sufficiently, but I can say this, that the reaction does persist for a long time after convalescence in a considerable percentage of cases. I have record of one case showing marked reaction after three years, two after two years and as many as six from nine months to one year, and a number three to six months. In one case, with a history of typhoid sixteen years before, while there was not a complete reaction, there was marked clumping.

The first case referred to above, that is, the one showing reaction three years after the disease, illustrates how sometimes this Widal reaction may mislead us. This man, W., private in Second Louisiana, was admitted to Savannah General Hospital in March. He came from a regimental camp two miles away. Upon admission he had high temperature, greatly distended abdomen, with history of fever and diarrhea for some days. Blood showed marked Widal; also marked leucocytosis. The blood examinations and physical signs led to the diagnosis of typhoid, and perforation of typhoid ulcer and general peritonitis. At autopsy no typhoid lesions were found, but extensive tuberculosis of both lungs, tubercular ulceration of intestines, cheesy mesenteric glands, etc. There were small tubercles on peritoneum over intestinal ulcers. The case was one of perforation of tuberculous ulcer. This seemed strange until a history of long-continued severe typhoid fever three years before at New Orleans was obtained from his brother. I had several times found the reaction when the patient presented typical malarial symptoms among soldiers who had been in the Santiago campaign, and then had typhoid at Montauk or some other camp. These men were very susceptible to malaria, and in several instances they showed at the same time the Widal reaction and the presence of the malarial parasite. These cases emphasize the necessity of a careful history and clinical examination, together with the blood examination.

Mixed infections, typhoid and malaria.— It is hard to find a term fitting to this condition, in which we find malaria complicating typhoid fever. The term "typhomalaria" is absolutely unfit and an unscientific term. We have no such disease as typhomalaria. It is a typhoid fever, in which generally during convalescence the malarial parasites appear in the blood, either as a recurrence of an old malaria, which existed before the typhoid, or as a fresh invasion of the malarial parasite, the patient at the time being in a malarial country.

We have met in our investigation 12 cases in which both the malarial parasites were found in the blood, and at the same time the Widal reaction was obtained. In but one of these cases was the malarial parasite found in the course of the fever of typhoid. This case is of unusual interest, and I will refer to it later. I have the temperature chart, which I shall be glad to show any members of the Association. In eight of the cases the malarial parasites appeared with accompanying symptoms during the convalescence. In the remaining three cases the soldiers had had typhoid from two to six months previously to the malarial attack. At the time that the blood of these cases showed the malarial parasite it also gave the Widal. These cases, of course, do not come under the head of mixed infections, but their mention serves to illustrate a possible source of error in cases reported as mixed infections, simply because the Widal was obtained at the same time that the malarial parasite

was found in the blood. In eight of these cases of "mixed" infection the malarial parasite occurred during convalescence only. In the other case the parasite was found both in the first week of the disease and on the eighteenth day of normal temperature, during convalescence. All these men came from Cuba, and had had malaria there. The earliest period that the malarial attack occurred during convalescence was on the fourteenth day of normal temperature: one case on the seventeenth day, one on the eighteenth day, one on the twenty-second day, and the others at varying intervals from one to two months after the temperature had reached normal. The case in which the parasite occurred during the acute stage of his typhoid deserves special mention. This soldier, a man about twenty-seven years old, native of Massachusetts, a first-class private, Signal Corps, United States Army, was in Cuba with Fifth Corps during the Santiago campaign.

History: He had chills and fever at Santiago, July and August, 1898; came to Montauk Point, and then to the command at Fort Myer about November 1st. On November 17th he had a chill and sharp rise of temperature. Blood examination showed double tertian (two crops of tertian malarial parasites — one mature, one half grown). His temperature reached normal on the 18th, but on the 20th the temperature was 100°; the temperature rose to 103° on the 22nd. Blood examination showed the estivo-autumnal parasite on this day; no tertian parasites; Widal negative. Blood was examined daily. The estivo-autumnal parasites (ovoids, crescents and round bodies), were found in gradually lessening numbers until the 27th day of November, that is, up to the eighth day of continuous fever; then they disappeared. The temperature came down to normal after nineteen days of fever. The highest point recorded on temperature chart was 104°, on November 27th. After repeated examinations for Widal, a positive reaction was obtained on the twenty-fifth day of the disease (after the temperature had been normal nearly a week). The man's temperature remained normal until December 26th, when he had a sharp chill, the temperature rising to 106°. The temperature fell to normal, but was followed by another chill and rise to 103.4° on the next day. Examination of blood showed double tertian (two crops of the malarial parasite). This first chill occurred after eighteen days of normal temperature.

In these nine cases the malarial infection was in five single tertian, in two double tertian, and in two double tertian and estivo-autumnal.

We have found malaria complicating or rather recurring during the convalescence from other diseases, and even in surgical cases. There appears to be no connection between typhoid and malaria other than that an attack of typhoid fever, by lowering the individual's resisting powers, gives favorable soil for a recurrence of his malaria, or affords a suitable condition for a fresh invasion by the malarial parasite. Probably careful investigation would reveal the fact that convalescents from diseases other than typhoid show quite as large a percentage complicated by malaria.

Blood examinations in the malarial fevers.— I regret that the time will not permit an analysis of these cases of malaria. In the series of malarial bloods examined (something over 300 in number) I failed to meet the quartan parasite. The double tertian occurred more frequently than is given in Thayer's report of his cases; also the combination of tertian and double tertian with estivo-autumnal were more frequent than is given in the same report of the malarial fevers of Baltimore. These cases all occurred among soldiers who had served in Cuba.

It was remarkable that certain districts, those of Santiago and the south coast, furnished nearly all the cases of estivo-autumnal fever, while the cases from Havana Province were nearly all of the tertian variety. We had many cases of tertian fever from Cuba, which were very resistant to quinine. One soldier, a hospital steward, on service at the United States General Hospital at Savannah, Ga., who had served in Cuba for some time, had five attacks during the three months he was stationed at that post. Each time the blood examination showed the tertian parasite. The man kept upon his feet, but took quinine quite regularly. After the fifth attack he was ordered to bed for a week, and with the combination of rest and quinine, there was no recurrence after one month. Several other similar cases came under my observation while at Savannah.

I wish to speak, in connection with malaria, of a stain which I have found very satisfactory. It is the writer's modification of the stain given by Thayer in his book. The great difficulty in staining the malarial parasite has been to get the parasite stained with the methylene blue not too strongly, and in such a manner that the pigment granules will stand out distinctly, and at the same time to have a good eosin stain in the red cells and in the eosinophilic granules. It is difficult to strike the happy medium, as all who have tried it well know. The method is that used by Thayer, namely: Stain with one-half per cent. of eosin in 70 per cent. alcohol two minutes, contrastain with saturated aqueous methylene blue or with Löffler's alkaline methylene blue for half a minute, with the additional step of washing specimen, after staining with eosin in a weak solution of acetic acid (about one-fourth of one per cent.) and then in water. The washing in dilute acetic acid seems to have the property of intensifying and setting the eosin stain so that there is no intermingling of the blue and red, and of preparing the parasite to receive a very delicate blue stain, in which the pigment granules stand out as distinctly as in the fresh blood.

We have found very satisfactory for ordinary work for a fixative of dried blood cover-slips a method which appeared some months ago in the *Johns Hopkins Bulletin*, namely, immersion in a one-per-cent. formalin solution in 90 per cent. alcohol for one minute. By this method of staining above described the red cells are stained beautifully.

In dried films of estivo-autumnal blood, using this stain, it will be seen quite clearly that the crescent, even in the degenerative stage, almost always is surrounded by at least a remnant of red cells.

Since completing this paper, I have had opportunity to look over the records of some 52 cases of malaria occurring on my service at Savannah. The study of the last 52 cases of malaria occurring among the soldiers sick at the United States General Hospital, Savannah, Ga., during the past three months is extremely interesting. All these men came from Cuba since March 10th. Some had only been there a couple of months; others for six months or more. Out of these 52 cases, 24 were single tertian, about

48 per cent., 10 were double tertian, nearly 20 per cent., 16 were estivo-autumnal, 32 per cent., one was estivo-autumnal and tertian, and one was estivo-autumnal and double tertian, 4 per cent., and among these, four showed the Widal at the time the malarial parasite was found. In two of these the parasite occurred during the convalescence from their typhoid, one on the fourteenth and one on the eighteenth day of normal temperature. The other two cases had had typhoid two and four months previously.

I hope I have brought before you clearly the great value, and, in fact, the necessity of careful systematic examination of the blood in obscure fevers, by not only the Widal method but also by that of the fresh blood. The greatest care is taken to furnish good operating sets and good operators to every camp, but when we compare the mortality from surgical cases and that from camp fevers (preventable fevers if early recognized), it must be admitted that even the surgical sets and the expert surgeons are not any more important to the army than the bacteriological set and the expert hematologist.

In conclusion I wish to acknowledge my indebtedness to General Sternberg, Surgeon-General of the Army, not only for permission to use the army records but for his personal encouragement in this work, and the opportunities he has given me for study. I also wish to thank Major-Surgeon Walter Reed, Pathologist to Army Medical Museum and President of the Army Typhoid Investigation Board, and the commanding officers of the United States General Hospitals at Savannah, Ga., and Fort Myer, Va., Major-Surgeons, United States Army, Drs. D. M. Appel and Wm. B. Davis.

THE PHENYLHYDRAZIN TEST FOR SUGAR IN THE URINE.

BY I. H. CORIAT, BOSTON,
Assistant in Medical Chemistry, Tufts College Medical School.

So many and so varied are the statements made in the text-books in describing this important test for sugar, that an attempt has been made in this paper to bring order out of chaos. As a reagent, both for laboratory and clinical work, phenylhydrazin possesses exceptional value and advantages — not only on account of its delicacy, but, as will be subsequently shown, as a positive test for the detection of sugar in the urine, even when present in minute quantities. As is well known, the reducing sugars possess the following chemical properties, which, although well marked, yet other substances are present at times in the urine which possess one or more of these properties, and thereby give rise to confusion:

(1) In alkaline solutions they reduce the salts of certain metals to their oxides, suboxides or the metals themselves — such as copper, bismuth and silver. This is shown in Fehling's, Trommer's, Nylander's and the silver tests.

(2) They decolorize and deoxidize solutions of indigo blue.

(3) They undergo fermentation with yeast — some of them, it is true, with difficulty.

(4) They turn the plane of polarized light either to the right or the left.

(5) They form with phenylhydrazin definite crystalline compounds possessing a fixed formula.

It is upon one or more of these properties that the clinical and laboratory tests for sugar depend.

Phenylhydrazin ($C_6 N_2 — HN — NH_2$) is derived from the group $H_2 N — NH_2$ by the substitution of a phenyl radical for one of the hydrogen atoms. It is strongly basic, and unites with acids to form salts, of which the best known is the hydrochlorate. It is but sparingly soluble in water, but readily soluble in acids, alcohol and ether, and combines with aldehydes to form hydrazones, and with sugars to form osazones. It reduces Fehling's solution in the cold with the evolution of nitrogen.[1] It was first brought to the notice of the medical profession, as a test for sugar, through the researches of E. Fischer.[2]

In order to test the delicacy of this reagent, and also to ascertain if it formed crystalline compounds with other basic bodies in the urine, so as to interfere with its accuracy, the following experiments were undertaken: One-half gramme each of the following carbohydrates was taken, dissolved in a test-tube in 10 cubic centimetres water, and to each solution was added one-half gramme sodium acetate and one-tenth gramme phenylhydrazin. They were all heated for one hour in the water bath, and allowed to cool, with the following results:

TABLE I.

Substance used.	Amount of precipitate.	Color of precipitate.
Lactose.	Heavy crystalline.	Yellow.
Glucose (dextrose).	" "	"
Levulose.	" "	"
Maltose	Large "	"
Saccharose (cane sugar).	Small "	"
Glycogen.	Slight amorphous.	Dark brown.
Potato starch.	Very slight (amorphous).	Light yellow.
Amylodextrin.	" " "	" "
Soluble starch.	" " "	" "
Inosite.	Slight.	" "
Control blank (phenylhydrazin and sodium acetate.	No.	

Under the microscope it was seen that some of these possessed a definite crystalline form, as tabulated.

TABLE II.—CRYSTALS.

Substance used.	Description of crystals.
Lactose.	Yellow needle-like crystals radiating from a centre.
Glucose.	Sheaves of long yellow needles.
Levulose.	Very long yellow needles, irregularly grouped.
Maltose.	Broad, radiating yellow flakes.
Cane sugar.	Very small fine needles and spicules.
Glycogen.	Dark-brown oily globules.
Potato starch.	Nothing.
Amylodextrin.	A few oily globules.
Soluble starch.	Nothing.
Inosite.	A few oily globules.
Control blank.	Nothing.

As will be seen from the above tables, all of the reducing sugars, including cane-sugar (which, however, will not reduce until it is split up), form definite crystalline compounds. In regard to cane sugar, it would seem at first as though the crystalline combination were due to the splitting up of the cane sugar into dextrose and levulose by the prolonged heating. However, a close study of these crystals shows that they possess a definite morphology, and in no way resemble the crystals derived from either dextrose or

[1] A. H. Allen: Chemistry of Urine, p. 60.
[2] E. Fischer: Berichte den deutschen chemischer Gesellschaft, 17,579, 1884.

levulose. In spite of statements to the contrary, it seems that cane sugar does form an independent compound with phenylhydrazin, as is seen both by the form and grouping of the crystals. Although no attempt was made to determine the melting point, such a test would have undoubtedly greatly aided their identification as a separate compound.

As dextrose (or glucose) is by far the most important of these sugars, and is what is meant in medicine by the generic name of sugar, the delicacy of the reagent with this carbohydrate was next determined, with the following results (amount used in each case was 10 cubic centimetres):

TABLE III.

Percentage.	Appearance of precipitate.	Crystals by microscope.
1	Very heavy.	Crystals.
0.1	Heavy.	Crystals.
0.01	Slight.	A few crystals.
0.001	Very slight.	Very few crystals, but well defined.
0.0001	No.	No crystals.

From the above it is evident that the limit of the delicacy of the test is about 0.0001, but this limit far exceeds that which would be necessary for practical purposes, as so small an amount of sugar in the urine has no clinical importance. The writer had occasion to examine a suspected urine for sugar in which Fehling's test was doubtful. Nylander's test gave but a faint brown coloration after standing, while phenylhydrazin gave well-defined crystals.

For the proper recognition of these crystals, and of the sugars from which they are formed, much stress has been laid upon their melting points. This, however, is of minor importance, because, as has been shown, the combination of each sugar with phenylhydrazin forms crystals which in every case have a definite morphology, and therefore each sugar can be recognized by these crystals alone without reference to their melting points. As applied to the urine, this would be of great clinical value. As it is well known that basic or other substances might occur in the urine which interfere with the usual clinical tests for sugar, the following substances were also tried with phenylhydrazin in the proportion that they exist in the urine.

TABLE IV.

Name.	Precipitate.
Urea.	None.
Uric acid.	Slight, a few oily globules.
Hippuric acid.	None.
Kreatinin.	None.

Neither the above bodies nor xanthin gives rise to crystals; the only substance that might cause confusion is glycuronic acid, which in alkaline or neutral solutions gives a yellow crystalline compound resembling phenylglucosazone, but whose melting point is lower. In von Jaksch's modification of the test in an acid solution, there is found only a brown resinous mass. This substance not only reacts positively with Fehling's solution, but also reduces bismuth and silver in alkaline solutions and is dextrorotary, but, however, it does not undergo fermentation with yeast.[3] This shows that we have in phenylhydrazin a reagent of great accuracy and delicacy, which not only enables us to detect sugar with certainty, but even to determine the kind of sugar present. Nothing else occurs in the urine, except the sugars, which gives rise to these crystalline compounds, each of which has a definite form and a definite melting point.

[3] Halliburton: Phys. and Path. Chemistry, p. 733-4.

Outside of the sugars, Fehling's and Nylander's tests are interfered with by the following bodies — either existing in the urine as such, or following their ingestion. The principal ones are as follows:

Fehling's test. — Chloral, chloroform, sulphonal, glycosuric, hippuric, salicylic, benzoic, glycuronic and uric acids, kreatinin, kreatin, xanthin, pyrocatechin, hydrochinon, albumin.

Nylander's test. — Albumin, free sulphuretted hydrogen, rhubarb pigment, melanin, kairin, glycosuric and glycuronic acids, turpentine, quinine, eucalyptus, and the presence of large amounts of uric acid.

To apply the phenylhydrazin test to the urine, take 25 cubic centimetres urine in a small beaker, add one gramme phenylhydrazin and two grammes sodium acetate. Heat over the water bath from thirty minutes to an hour, and then cool by plunging the beaker in cold water. A yellow crystalline deposit is thrown down, which on examination by the microscope is found to consist of the yellow crystals of phenylglucosazone if this sugar be present. The reaction takes place according to the following equations:

$$\underset{\text{glucose}}{C_6H_{12}O_6} + \underset{\text{phenylhydrazin}}{NH_2 - NH.C_6H_5} =$$

$$\underset{\text{glycose-phenylhydrazone}}{C_6H_{12}O_5 - N_2H.C_6H_5} + \underset{\text{water}}{H_2O}$$

$$\underset{\text{glycose-phenylhydrazone}}{C_6H_{12}O_5 - N_2H.C_6H_5} + \underset{\text{phenylhydrazin}}{NH_2 - NH.C_6H_5} =$$

$$\underset{\text{phenylglucosazone}}{C_6H_{10}O_4 - (N_2H.C_6H_5)_2} + H_2O + H_2$$

From the above equation it will be seen that an excess of phenylhydrazin must be present in order that the crystals may be formed.

The experiments set forth in this paper seem to justify the following conclusions:

(1) Phenylhydrazin forms with the reducing sugars, crystalline chemical compounds, each having an individual and definite morphology.

(2) Albumin need not be removed.

(3) It is possible to recognize any of the sugars by their crystalline forms alone, with recourse to their melting points.

(4) Substances that interfere with Fehling's or Nylander's reagents do not interfere with this test, or form anything that would in any way be misleading.

(5) The test is an extremely delicate one, and of undoubted accuracy.

Clinical Department.

AN INSTANCE OF URTICARIA OCCURRING AS AN INITIAL RASH IN TYPHOID FEVER.

BY FRANK WOODBURY, M.D., PHILADELPHIA,
Associate Professor of Laryngology, Philadelphia Polyclinic, etc.

On April 10th I was called to see Mr. L. R., married, forty-three years of age, by occupation a special officer of one of our principal hotels, who gave the following history of his illness: He had been in his usual health and, in fact, felt perfectly well until five

days before I saw him. As the weather had changed and become cool during the preceding day (April 4th), he thought it advisable, merely as a matter of precaution, to swallow two quinine (two grains) pills on going to bed, to ward off a possible cold. He had had no unusual feelings on that evening or during the night that he could think of, except that he was very thirsty and had drunk water several times before going to bed. The next day (April 5th) he took two more quinine pills. Later, as he was constipated and had headache, he took a bottle of citrate of magnesia solution and, in the evening on going to bed, he supplemented this with another bottle, which operated freely in the morning, but his headache continued. During the next three days he had no evacuation of the bowels and his headache increased and became associated with neuralgia of the right side of his face. He also had pain in the lumbosacral region, for the relief of which he applied a belladonna plaster. He gave up work (April 6th) four days before I saw him. He had not been losing strength for a few weeks, nor did he have epistaxis.

I found him lying in bed suffering with dull headache and neuralgia of the face. He also complained of pain in his back, and was still wearing the plaster. He had been very restless and had no sleep the night before. His skin was hot, dry and dusky, or slightly jaundiced. His temperature was 103°, pulse 120, respiration 24. He had no cough. Examination of the lung was negative, except that a few mucous râles were found posteriorly. Heart sounds normal. Intelligence perfect; no hebetude and no delirium. When questioned directly with regard to chills, he stated that he had the day before experienced some chilliness, but no decided rigor and no sweating. He thought that he had had an attack of intermittent when he lived in a malarial neighborhood some six years before. Two years previous to present illness, he had suffered with an attack of influenza, lasting a week or ten days. He had never previously had typhoid fever. His general strength and appetite, as already intimated, had been good and unimpaired until April 5th.

I ordered capsules containing three grains acetanilid and two of quinine hydrochlorate, to be given every two hours, and also a fever mixture of citrate of potassium, solution of ammonium acetate and syrup of red orange, on the alternate two hours, during the day. At ten o'clock at night he was given two grains of calomel with bicarbonate of soda (triturated), with directions to take a Seidlitz powder in the morning. He also was directed to have the entire body surface sponged with cool water at night. Diet restricted to tea and broth.

The next day he was better. He had enjoyed a few hours' sleep during the night. The bowels were moved twice in the morning, the discharges being light colored and in consistency like gruel. His temperature was not taken until afternoon, when it was again found to be nearly 103°. His tongue was less coated, but there was a distinct dryness towards the tip, suggesting the wedge-shaped dryness of typhoid fever. Upon examination no eruption was detected upon the skin. The abdomen was rather scaphoid and not tender. Liver dulness not increased, splenic area moderately extended. No pulmonary complications. He was advised to have the belladonna plaster removed, and the use of a little coal oil was suggested to clean the plaster from the skin. The medicines of the day before were continued, with the exception of the calomel at night. A specimen of blood was taken from the lobe of his ear for examination for the Widal reaction. Examination of the urine only revealed excess of urates and coloring matters, with deficiency of water, no albumin.

On the following day he was found covered with an eruption of urticaria, from which he had suffered all night, the wheals appearing principally on the trunk, thighs and arms. The fever temperature continued (102.5°), but his general condition seemed to be improved in spite of the irritation of the skin. Sponging with a solution of sodium bicarbonate was ordered, and a sulphonal powder (10 grains) given at night. In the morning he reported having had a better night, although some characteristic wheals could still be seen upon his body, which, however, disappeared during the day. A few, small, rose-colored spots, disappearing upon pressure, were found upon the anterior surface of the body, after diligent search. The bowels were moved once or twice daily, the stools soft, liquid, and light yellow in color, presenting a typhoid appearance. On the 13th, a report was received from the Bureau of Health Laboratory of Hygiene, stating that the test made of the blood "did give the typhoid reaction."

During the next two days he was kept upon a milk diet, and took beta-naphthol (three grains) every three hours, and had frequent cold sponging of the body. He was feeling much better, but, as the sickness was likely to be of some weeks' duration, it was thought best to have him admitted into the Pennsylvania Hospital (April 15th), where he received most careful and skilful treatment from Dr. F. A. Packard, attending physician, and Dr. C. F. Mitchell, resident, to whose courtesy I am indebted for the subsequent notes of the case: On admission, his temperature was 102°, pulse full and strong, face flushed, tongue coated, moist. Complained only of headache and weakness. No hebetude. Abdomen not distended or tender. Liver dulness normal. Splenic dulness increased. Few scattered enteric spots over abdomen and chest. Heart normal, sounds regular, 90. Lungs negative, respiration 24. Urine amber, cloudy, acid, 1.030, trace of albumin, no sugar, a few hyaline casts.

The treatment ordered was beta-naphol, three grains every four hours, with a cold bath when the temperature was 102° or over. April 17th the spots upon the abdomen were more developed. The Widal test was again positive. The subsequent course of the disease was that of an ordinary uncomplicated case of typhoid except that frequent soap and water enemata were required to overcome the constipation. Throughout the entire course of the illness there were no head symptoms. The daily temperature remained near to 102°, until the 28th, after which it gradually settled to the normal (on May 2d). He had twelve baths altogether while in the hospital. He was allowed to sit up on May 10th, and five days later was discharged cured. Since then his health has been excellent and he has gained largely in flesh. When he left the hospital his weight was one hundred and thirty pounds; it is now one hundred and eighty. He cannot recall ever having had an attack of urticaria previously.

This case appears to be one in which the typical typhoid rash was preceded or ushered in by acute urticaria. Similar cases have been recorded in medical literature, but they are of sufficiently rare occurrence to justify the publication of the brief history

of this case, which also possesses some interest from a diagnostic point of view, as it at first presented the appearance of infection by grippe or malaria. It is barely possible that the hives may have been, after all, only *urticaria medicamentosa*, either due to the administration of acetanilid and quinine, or the local use of coal oil, but either supposition is more remote and improbable than the assumption that the urticaria was in this case simply the initial rash of the typhoid fever.

A CASE OF SUPER-ROTATION.

BY A. F. WHEAT, M.D., MANCHESTER, N. H.

Super-rotation, although not a rare thing, is still sufficiently so to be worthy of mention, especially in a case like this, where the opportunities for observation were so favorable for diagnosis.

Mrs. R., thirty-five years old; height, four feet, eight inches. F. H., mother of patient, had four successive deliveries with forceps. A cousin on mother's side had one delivery with forceps.

History of previous labors. — Seven years ago, nine-and-one-half-pound boy, three days in labor; five years ago, eight-and-one-half-pound girl, twenty-four hours in labor; three years ago, six-pound girl, twenty-four hours in labor; eighteen months ago, two-pound boy, born at eight months, having only two pains.

November 1, 1897. Patient had bearing-down pains for several hours, and she thought she was in labor, but nothing came out of it. This was the result of doing a heavy washing.

December 11th, noon. Pains began in earnest. External palpation showed a right position, breech at fundus. Fetus could be plainly mapped out. Fetal heart, 140, to right of and below umbilicus. Head not engaged at first visit; os size of twenty-five cent piece; membranes unruptured; pains regular, about every five minutes, lasting two to four minutes.

Nine P. M. Pains of bearing-down character and lasting longer; os size of fifty-cent piece; head fairly well engaged; pains continued good; os dilated very slowly; membranes bulging but very little. At midnight head was well engaged; os two-thirds dilated. From this time on there was no gain. Pains were excellent and patient worked well, but no further progress was made. Position was still a right one. At five A. M., under chloroform anesthesia, forceps were applied to a high O. L. A., the head having rotated to that position, though palpation still showed back for fetus to the right. Membranes were ruptured just before putting on forceps, and the application was rather difficult. Extraction was easy, and the head was shelled out with the finger in the rectum. External restitution was to the right. Cord was twice around the neck. There was a quarter-inch tear of the perineum.

Weight of the child, a girl, was eight and one-half pounds. Cord was of average length. The caput succedaneum was that of a right position, the head being moulded considerably.

This case is of interest, owing to the certainty with which the diagnosis was made of the position. The super-rotation is attributed to the exertions of the patient during the last four hours previous to the application of forceps; to the arrest of descent of the head, the latter being due, perhaps, to the relative shortness of the cord, and also to the disproportion between the head and the size of the maternal parts, that is, a large fetus and a small pelvis. No pelvic contraction was made out, but no accurate measurements were made.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

(Concluded from No. 20, p. 498.)

GELATINE IN THE TREATMENT OF ANEURISMS AND HEMORRHAGES.

Lancereaux, of Paris, in the fall of 1898, published a new method of treating aneurisms by means of subcutaneous injections of gelatine. Though the method is still in an experimental stage, and I therefore do not recommend its general use, still either in the treatment of aneurisms, or more likely inoperable hemorrhages, it seems probable that gelatine will play a considerable rôle in the future. Futcher[9] reports four cases of aneurism treated in this manner from the medical wards of the Johns Hopkins Hospital. The method is as follows: 250 cubic centimetres of a two-per-cent. solution of gelatine in normal sterilized salt solution are injected into the thigh under aseptic precautions. The injection should always be made at a considerable distance from the aneurism, and the interval of time between injections should be from two to fifteen days. Lancereaux states about twenty injections are necessary to produce a cure, and he reports a large percentage of cures from a considerable series of cases. The saccular dilatations of the aorta or other vessels constitute the favorable cases for treatment.

The beneficial effect is supposed to be due to increased coagulability of the blood. Laborde claims that it is not, and Camus and Gley have found that there is no increase in the coagulability of the blood after intraperitoneal injections of gelatine in rabbits.

The first of the Johns Hopkins cases was a man with saccular aneurism of the arch of the aorta. He received six injections — two of the two-per-cent. solution and four of a one-per-cent. solution, because it was found that the first gave considerable pain. This pain was very intense, and most severe about six hours after the injection. The patient appeared to be doing fairly well, when he was suddenly seized with an attack of dyspnea, coughing and profuse hemorrhage, and died. At the autopsy there was found a general dilatation of the arch of the aorta, with a localized saccular dilatation about the junction of the transverse and descending portion of the arch. At the point of pressure of the sac on the left bronchus there had been a perforation causing hemorrhage and death. There was no deposition of fibrin on the sac wall.

The second case was a man with aneurism of the descending portion of the thoracic aorta. After 28 injections there was very marked diminution in the amount of pain and the pulsation appreciably lessened. During the treatment the patient gained nineteen pounds in weight and was the most satisfactory case of the four.

The third case at the time of writing had had 16 injections with little or no evident improvement; the fourth similarly 21 injections.

[9] Johns Hopkins Bulletin, vol. x, No. 98, p. 95.

Paljakow[9] convinced himself of the hemostatic qualities of gelatine by experiments on animals. In cases of copious hemorrhoidal hemorrhages, where all other well-known therapeutic measures failed, he saw a prompt effect following enemata of a 10-per-cent. watery solution of gelatine. These experiences led him to try gelatine in a gastric hemorrhage where large doses of bismuth had failed. He gave 200 cubic centimetres of a 10-per-cent. solution of gelatine three times daily with success.

In the Leipsic Medical Society Curschman[10] reported his results with the use of gelatine. The cases to which the injections were given were six with gastric hemorrhage, six with pulmonary, one with an intestinal hemorrhage in phthisis, and one with hemorrhoids. For several days in succession 200 grammes sterilized gelatine solution were injected subcutaneously or into the muscles. In 13 of these cases the hemorrhage ceased in a strikingly short time, and it seemed to him that the method was worthy of further trial.

In the discussion of Schmidt's paper on the "Early Diagnosis and Treatment of Aortic Aneurisms," Senator reported one case of aneurism of the aortic arch in which he had tried the gelatine injections with good results. Schrötter, on the other hand, at the same time stated that his results had been unsatisfactory in two cases, and Unverricht added another of a similar character, but considers that the matter deserves further study.

Gutman used with great success gelatine in a case of melena neonatorum where there was bleeding from the rectum. He gave the gelatine solution, which he prepared on the spot, by the mouth and also by enema.

THE VALUE OF ALBUMOSES AND PEPTONES AS FOOD.

Many doctors and many more yet of the laity are so much in the habit of using predigested foods that a consideration of their value is worthy of attention. Voit[11] has recently discussed the question and rightly says the worth of the albumoses and peptones depends upon the answers which can be given to the following questions:

(1) Can they be looked upon as the equivalent of albumin?

(2) Under what circumstances is their administration indicated?

The first question can be answered as follows: The artificial albumoses as well as amphopeptone are the equivalent of albumin. Antipeptone, on the other hand, has not the same value. This being the case, those so-called peptone preparations are to be preferred which contain in reality little peptone, but much albumose. However, this does not cover the whole question, since the worth of any food is commensurate with its absorption from the intestinal tract. The poorer this absorption is, just so much poorer is this food compared with another of the same value in calories. In this relation the albumoses are far inferior to the undigested albumin in meat, eggs and milk. If the former are taken in greater amounts, the result is diarrhea, and their own assimilation as well as that of the food in which they are given is still further lowered. This has been worked out by Ellinger on dogs and by Hildebrand and Bornstein on men.

Food.	Nitrogen taken in the food.	Nitrogen lost in the stools.	Loss of nitrogen in per cent. of that ingested.
Meat powder two days	17.81 grammes	1.0 gramme	5.6 per cent.
Somatose	17.81 grammes	10.6 grammes	59.4 per cent.

But it is not the amount alone but the concentration of these albumin substitutes which is irritating to the intestine. With the albumins of an ordinary diet the change into albumoses and peptones is gradual and those formed are absorbed so quickly that the concentration is slight.

The preparations can be taken only in small amounts — for example, 20 grammes in three or four portions — and yet here digestive disturbance is liable to occur. Should this not be the case, in the course of a few weeks the patient sickens of the preparation. Twenty grammes somatose corresponds to 16 grammes albumin, which is no more than there is in 80 grammes lean meat or somewhat more than in one egg. The cost of 100 grammes albumin in form of somatose is about fifteen times that of 100 grammes albumin in the form of eggs. Consequently the first question, namely, Are the albumoses and peptones equivalent to albumin? is to be answered in the negative. These products can replace the albumin, but on account of their deficient absorption, their unpalatableness and their high price, they are far from being its equivalent.

Under what circumstances is their administration indicated? Presumably to relieve the weakened or diseased gastro-intestinal tract of the digestion of proteids. But peptonization of all the albumin ingested is not necessary for its absorption. The elder Voit and Bauer, and recently Friedländer, have shown that soluble unchanged egg and serum albumin can be directly absorbed. Apart from this fact we know that it is an error to suppose that where the gastric juice is weak or even absent albumin is not digested, since the stronger pancreatic juice takes its place. This is best shown by Czerny's dog, which lived for six years after the stomach had been removed, and by the recently published cases of total resection of the stomach. Even in cases of fever, when sub- or an-acidity rules in the stomach, von Hösslin's work has shown that the albumin is nearly as well absorbed as in the normal individual. Therefore, disease of the stomach is not an indication for predigested foods.

If the pancreatic juice fails, only 44 per cent. of the albumin is digested and absorbed. In this condition of affairs then the predigested foods are indicated, or we might add the raw pancreas to the albumin in the food, since experiments show that the digestion then rises to normal limits. But such cases are rare.

It is claimed that the albumoses and peptones protect the gastro-intestinal tract, but do they achieve this end? The work of digestion requires the secretion of the digestive juices, the absorption of food materials and the driving onward of the residue. But peristalsis is increased by albumoses and peptones, and we may even get diarrhea; the secreting cells are stimulated to increased production of juices, as Cahn has shown for the stomach, and Ellinger for the intestine, and finally the work of absorption of the artificial foods is confined to a small portion of the intestine rather than to its whole course, as is more nearly the case with the undigested foods.

There are indications for the use of these albumin derivatives, but in quite other channels than we are ac-

[9] Cent. f. d. gesammt. Therap., 1899, March, p. 185.
[10] Münch. med. Wochen., No. 11, 1899, p. 370.
[11] Loc. cit., Feb. 7, 1899, p. 172.

customed to see indicated. They are to be prescribed to stimulate, not to spare, the gastro-intestinal tract. They help the appetite in small doses and tend to overcome constipation; that is, they are stomachics and purgatives.

THE CASEIN PREPARATIONS AND THE ADVANCE IN THERAPY WHICH TROPON REPRESENTS.

Heim [12] is in agreement with the ideas of Voit, but advances the subject a step further. Pure peptones will be used in medicine, he says, but little longer, and even the albumoses, which are preferable, have not the great importance for nutrition which was once accorded them. But the principle which led to the use of these concentrated food-substitutes is sound and the only question that remains is to get the proper food. Impressed with the view that in casein we have an albumin of supreme importance, Salkowski and Röhmann have investigated the casein preparations and with others have shown their usefulness. Their capability of absorption, their power to replace the ordinary albumins in the food and the agreeableness with which they can be taken for long periods contrasts strongly with the qualities of the albumoses and peptones.

The chief casein preparations are eucasin, nutrose, sanatogen and sanose. These are all easily digested and soluble. The first two represent combinations of casein with ammonium and sodium respectively, and owe their solubility to this fact. Sanatogen is formed from casein by the addition of a five-per-cent. solution of glycerine phosphate of sodium. But there is one failure which these foods as well as the peptones share in common, namely, they are expensive. For instance, one kilogramme (2.2 pounds) albumin costs in the form of eucasin nearly $3.00; in nutrose, $5.00; in Merck's peptone, $5.25; in Kemmerich's, $15.25—prices so high as to prevent the general use. With this in mind, Finkler introduced last year a new albumin preparation — tropon — which is uncommonly cheap: one kilogramme albumin in the form of tropon costs only $1.00. Tropon is made out of various animal and vegetable albumins, and is a fine mealy substance of grayish-brown appearance, odorless, tasteless and insoluble in water. This latter fact does not interfere with its usefulness. Experiments with tropon show it is well borne by the stomach and bowels in infectious diseases, in cases of persistent nausea where little food can be given, and in the convalescence from conditions of under-nutrition. Large amounts can be given without unpleasant symptoms, and patients take it for long periods without disgust. It therefore represents the enormous advance modern chemistry has taken in nutritional treatment.

ARTIFICIAL FEEDING BY MEANS OF SUBCUTANEOUS INJECTIONS.

The recently started *Centralblatt für die Grenzgebiete der Medizin und Chirurgie* has contained most excellent summaries of recent work. In the June number Bass [13] reviews the subject of artificial feeding by subcutaneous injections. These have been in use since 1869, when Menzel and Perco, in Vienna, injected various oils under the skin of dogs. Whittacker, of Cincinnati, appears to be the first in America to apply this procedure to a human being. Others experimented with the matter in a very unscientific way, so that it was not until 1895, when Leube presented his work on the subject at the German Congress for Internal Medicine, that the subject was put on a rational basis.

Albuminous bodies are not serviceable for this purpose. The native albumins, egg albumins, casein, etc., are not assimilated by the blood, and acid and alkali albumin cannot be sterilized. Albumoses and peptones act as poisons when directly introduced into the circulation, and subcutaneously are of little account because such small amounts are absorbed. In the future something may be hoped for by the use of Blum's protogen, which is a soluble, uncoagulable albumin.

Carbohydrates were injected by Leube with poor success, but Voit and Rieder introduced into the thighs from 10 to 1,000 cubic centimetres of a 10-per-cent. grape-sugar solution with very good results. But 2.6 grammes of the sugar appeared in the urine when 100 grammes (1,000 cubic centimetres of the 10-per-cent. solution) were injected. Levolose, galactose and maltose could be used in place of the dextrose, but cane sugar and milk sugar were able to be recovered almost quantitatively from the urine after being injected. Pressure and an ice bag were applied to the seat of the injection for a short time.

Fats have worked satisfactorily for subcutaneous feeding in the hands of at least a dozen physicians. Leube proved that butter fat injected into a dog enabled the animal to "put on" fat, and that the fat so put on differed little from the ordinary fat of dogs. Further, the butter so injected was completely used up in the economy. Rochemond gives the results of 500 injections on 28 patients. By a special syringe, which could be wholly sterilized, the oil could be injected so slowly (100 cubic centimetres in one-half to one hour) as to cause no pain. Abscesses, necroses and emboli never occurred. As a rule only 60 grammes were injected in any one part.

Of the three food stuffs at present, the albumins are not practicable for subcutaneous injections; the carbohydrates in the form of a 10-per-cent. solution of dextrose have been used successfully, but the fats have produced results which have claimed the unanimous praise of all who have used them. The technique is simple, for a large subcutaneous syringe may be used or a simple trochar, tube and funnel.

THE EXCEPTIONAL NEED OF PEPSIN IN THE TREATMENT OF DIGESTIVE DISTURBANCES.

Pepsin is so often recommended in diseases of the stomach, even at the present day, that the excellent summary by Cushny [14] of its therapeutic value can be appropriately inserted in this report. In alkaline solution it is inert, and in fact is rapidly decomposed, so that when pepsin and alkaline carbonates or bicarbonates are prescribed together, the effects are due to the alkalies only. Pepsin is used in therapeutics on the theory that the stomach does not secrete enough of the ferment in certain conditions. But it may be questioned whether this is true in even a small proportion of the cases treated with pepsin. The gastric juice is almost always capable of digesting proteids if it is acid in reaction. In a number of forms of dyspepsia the acid secretion is insufficient, but the ferment is almost always present in quantity, for it digests proteids out-

[12] Therap. Monats., 1899, 489.
[13] Cent. f. d. Grenzgebiete d. Med. u. Chirurgie, June 15, 1899, p. 481.
[14] Pharmacology and Therapeutics, 1899, p. 685.

side the body as soon as it is acidulated. Pepsin is indicated, then, only in the rare cases in which the contents of the stomach acidulated with hydrochloric acid fail to digest proteids. It is very often administered in other forms of dyspepsia, and certainly does no harm, but there is no question that it is entirely unnecessary in the great majority of cases in which it is prescribed.

THE MODERN BLOOD PREPARATIONS AND THE ABSORPTION OF BLOOD-IRON.

All will agree that these preparations have enticing names, and are most ingeniously advertised, but in the first place, are they preferable to the old Blaud's pill which can be bought at the rate of twenty for a cent, and in the second place, heretical though it may be, we must ask, are they as good? Rosenstein has sought to answer these questions in the leading article of the *Deutsche medicinische Wochenschrift* [15] for April. He examined nearly two dozen varieties, and though these identical ones are not in so common use here as in Germany, still a perusal of the names is instructive because they probably serve as the counterparts of our home market: Radlauer's Hämoglobin-pastillen, Nardi's Hämoglobin, Pfeuffer's Hämoglobin-Syrup, and Hämoglobinzettchen, Hommel's Hämatogen, Fortuna-Hämatogen, Theuer's Hämoglobin-Albuminat, Dynamogen, Ferrhämin-Hertel, Dahmen's Hämalbumin, Hämoglobinum-Merck, Hämogallol-Kobert, Hämol-Kobert, Sanguinoform, Krewel's Sanguinalmedikamente, Fleischsaft Puro, meat juice, ordinary blood sausage in raw and cooked condition, Sanguis Bovinus Exsiccatus.

His conclusions based on spectroscopic examinations are as follows: Not a single one of the preparations examined consisted of entirely pure blood. All advertisements and publications which either pass over this fact or, on the other hand, make mention of the purity of the blood-coloring matter in an especial product give rise to a wrong idea in the doctor's mind regarding the composition of these medicaments, and consequently are deceptive.

But this is not all. The recommendation of blood preparations as blood-forming material rests on false conceptions. Even if the preparations contained pure blood, their effectiveness would not be increased, since the absorption of the "blood-iron" in the gastro-intestinal tract has been most emphatically denied by Voit and Cloetta. Further, clinical results do not justify their use, since their alleged action in no way surpasses that of inorganic preparations, whose absorption is an established fact.

"Blood-iron" can be administered subcutaneously, but this method is not practical, though in this instance the iron can be absorbed and retained by the system. Of late, injections of hemoglobin in physiological salt solution have been employed in place of transfusion. They are a sign of progress, because it is proven that such hemoglobin will be made use of by the organism. In contrast to this advance the recommendation of preparations of blood by the mouth is a backward step.

THE ABSORPTION OF HEMATIN AND THE IMPORTANCE OF THE HEMOGLOBIN PREPARATIONS.

Starck [16] reviews the work and calls especial attention to that done by Voit in 1892, who showed that oxyhemoglobin given to a dog was not absorbed, and to that of Cloetta, who proved that hemin, hematin and blood itself so administered underwent not the slightest absorption, but could be wholly recovered from the stools. Starck has confirmed their work by using other methods, which he describes in full. He concludes by saying: "These various hemoglobin preparations are just as little a 'perfect substitute for blood' as the blood which is poured out into the stomach in a gastric hemorrhage and is there submitted to the action of the gastric juice. No one has ever claimed that such blood was assimilated by the body. It is lost quite as much as if the hemorrhage was external."

All that has been said, it must be noticed, refers to blood-iron. Iron in combination with albumin, like Schmiedeberg's ferratin and carniferrin, is capable of absorption by the body.

Cushny [17] sums up his discussion of the matter in the following words: "The 'organic' iron preparations therefore seem to have little to recommend them as superior to the 'inorganic,' except that ferratin and carniferrin are probably more rapidly absorbed and are less liable to cause dyspepsia than many of the older salts. Where there is special difficulty in administering the more commonly used forms, these two may be substituted for them with advantage, but they seem to be unnecessary in ordinary cases."

DIABETES.

Williamson's* [18] *milk for diabetes. — As milk contains five per cent. sugar, it is only in an exceptionally mild form of diabetes that it can be included in the diet. A nourishing drink, however, is of so much value in diabetes that Williamson's suggestion of a method for removing the sugar is a welcome one. Williamson attains this end by diluting cream with several volumes of water and then allowing the fat in the same to rise to the top. The sugar remains in the watery solution. The rule is as follows: To about one pint of water, placed in a large drinking-pot or tall vessel, three or four tablespoonfuls of fresh cream are added and well mixed. The mixture is allowed to stand for twelve to twenty-four hours, when most of the fatty matter of the cream floats to the top; it can be skimmed off with a teaspoon easily, and on examination it will be found practically free from sugar. This fatty matter thus separated is placed in a glass and mixed with water. Then the white of an egg is added, and the mixture well stirred. The water and white of the egg are added in sufficient quantities to make a mixture which has the exact color and consistence of ordinary milk. If a little salt and a trace of saccharine be added, a palatable drink, practically free from milk sugar, is produced, which has almost the same taste as milk, and which contains a large amount of fatty material. With very little practice the right proportions can be easily guessed, and of course much larger qnantities can be employed than those mentioned above. A drink may thus be prepared which contains a large amount of fat, and which can be taken *ad libitum* by diabetic patients, even if the most rigid diet be deemed necessary.

Lauritzen [19] has used this milk and confirms Williamson's statement that it is palatable and contains

[15] Deutsch. med. Wochen., No. 17, 1899, p. 265.
[16] Loc. cit., No. 51, 1898, p. 805.
[17] Pharmacology and Therapeutics, 1899, p. 648.
[18] Diabetes Mellitus and its Treatment. Williamson, 1898, p. 334.
[19] Zeitschrift für diät. u. phys. Therapie, 1899, Bd. iii., H. III, p. 220.

only a trace of sugar. He adds a few modifications as to its preparation. It is of little advantage to have the milk stand more than twelve hours, as the per cent. of fat in the milk thus prepared is 5.25 per cent., while in twenty-four hours it is but 5.88 per cent. It is important, however, that the milk be kept during the twelve hours in a cold place. It is not necessary that saccharine be added, and I can confirm Lauritzen's statement that the milk is preferable without artificial sweetening. To be appetizing it must be taken when freshly made, or else the cream rises to the top of the glass. If the patient is already taking too much albumin the white of egg can be left out.

I never suggest a new kind of food to a diabetic patient without being reminded of an experience I once had in recommending sardines to a boy with this disease. He was delighted at the prospect of a change in his diet, and that same night ate a whole box of sardines! and in his zealousness to follow my general advice about fat drank up all the sardine oil! He did not die, but for over a year the cathartic virtues of sardines and sardine oil were so vividly present in his mind that he could not bring himself to try them again, and so lost the advantage of a good diabetic food. Moral: In recommending a new food to a diabetic patient prescribe the amount.

A diabetic lunch. — Diabetic patients are hungry between meals, even if they are sugar free and gaining in weight. In the same way they are faint on rising in the morning. I have found the following little lunch especially serviceable at this time because it is easily prepared, is extremely nourishing (equivalent to one portion of lean beefsteak), is a stimulant, and patients take it daily without tiring of it. A tablespoonful of very thick cream is beaten up thoroughly with one egg. To this mixture sufficient coffee is added to fill a cup, and the whole is then stirred. If hot, it is very agreeable. No sugar need be added.

THE TREATMENT OF DIABETIC COMA BY SUBCUTANEOUS OR INTRAVENOUS INJECTIONS.

Weber [20] has collected 31 cases from the literature. Statistics, however, are not of much value in this connection, because the injections used have varied so much in quantity and quality. Of the 31 patients, two recovered from complete coma, five recovered from an incomplete coma, in 11 there was a transitory return to consciousness, and in 13 there was none or very slight improvement.

The real treatment of diabetic coma lies in its prophylaxis. Naunym, Minkowsky, Senator and Zinn all praise the use of alkalis in this connection. The presence of Gerhardt's ferric chloride reaction is the indication for their administration.

A Rat-trap for Plague-infected Rats. — United States Consul Heenan, at Odessa, writes: "I saw the other day a curious device attached to the mooring-rope or cable of a steamer which was loading at this port (Odessa). The cable was run through a piece of iron pipe about a foot in length, and welded on the end of the pipe was a flange, or funnel, which looked like the end of a trumpet, with the wide end facing the ship. The iron pipe was stuffed with oakum, to prevent it from slipping and also to prevent rats from passing through it. This novel construction was quite close to the ship." — *Medical News.*

[20] Zeitsch. für diät. u. phys. Therapie, 1899, p. 54.

Reports of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

Sixteenth Annual Meeting, Held in New York Academy of Medicine, October 24, 25 and 26, 1899.

(Concluded from No. 20, p. 500.)

REOPENING THE ABDOMEN FOR POST-OPERATIVE SEPTIC PERITONITIS.

Dr. C. C. Frederick, of Buffalo, reported four cases, which brought up the question of the use of drainage, in addition to the main one of reopening the abdomen where there was general septic peritonitis. Two of these cases were, in all probability, examples of late infection from the drainage tube. Three of the four cases had been cured, and yet these four represented all the cases in which he had reopened the abdomen for septic peritonitis out of about one thousand abdominal sections.

Dr. Frederick Holme Wiggin, of New York, said that the use of the drainage tube in such cases was futile, and was dangerous because it opened new channels of infection. It was far better, even in bad cases of sepsis, to avoid drainage, and trust to the injection of saline solution into the veins or cellular tissue. The peritoneal cavity should be cleansed by the free use of peroxide of hydrogen, followed by saline solution.

Dr. Henry O. Marcy, of Boston, said that he was afraid to use hydrogen peroxide, believing that it tended to diffuse the infective material. As a substitute he made use of a 1-to-1,000 solution of bichloride of mercury, and followed this with a large quantity of saline solution.

MORPHINISM AMONG PHYSICIANS.

Dr. T. D. Crothers, of Hartford, Conn., read a paper with this title, in which he declared that 10 per cent. of all medical men used morphine, and that one of the chief causes was self treatment.

Dr. Leroy J. Brooks, of Norwich, spoke of several cases coming within his own knowledge, and of the temptations arising from the strain and weariness to which the country physician was subjected.

ALBUMINURIA: ITS PROGNOSTIC VALUE IN CHRONIC NEPHRITIS.

Dr. Charles Alling Tuttle, of New Haven, Conn., contributed this paper. In it he asserted that chronic interstitial nephritis might exist without symptoms of kidney disease or the presence of albumin or casts in the urine, and that these urinary symptoms need not be reckoned with in giving a prognosis.

CURABILITY OF EPILEPSY, AND HOW IT MAY BE ACCOMPLISHED.

Dr. William P. Spratling, of the Craig Colony for Epileptics, read a paper with the above title. He objected to prescribing for young children remedies designed to suppress convulsive phenomena, on the ground that they impaired digestion and assimilation, and, after all, only served to mask the disease. It was most important to look for and study the aura, and before giving a prognosis to inquire carefully into the family history. As the complete control of the patient's habits of life was very essential,

the value of the colony plan was obvious. The diet should be simple and nutritious, and the whole mode of life should be changed.

DISCUSSION OF TYPHOID FEVER.

DR. HERMAN M. BIGGS opened this discussion by a consideration of

THE ADVANCE IN OUR KNOWLEDGE.

The first epoch, so to speak, was that from 1850 to 1880, the beginning of which had been marked by the appearance of articles written by such men as Shattuck and Flint, in this country, and Jenner, in England. A second period had been marked out by the discovery of the typhoid bacillus in 1880. Regarding the Widal test, he said that while it had but little negative value, a positive reaction was almost conclusive proof of the existence of typhoid fever. Between the third and seventh days, or in just that period in which the clinical symptoms were far from distinctive, and the Widal reaction was often not obtainable, it was frequently possible to obtain in the urine the diazo reaction of Ehrlich. The chief drawback to this diagnostic test was its occurrence with acute miliary tuberculosis, a disease often confounded with typhoid. Statistics were quoted to show the apparent value of preventive inoculations.

DR. W. H. PARK, of New York, discussed the

BACTERIOLOGY.

He stated that the typhoid bacilli remained in the feces from a few hours to several days; they could rarely be detected in water for a longer period than two weeks. There was abundant proof that flies and other insects were carriers of infection. The typhoid bacilli did not usually make their appearance in the urine until the third week, but after that time they were present in large numbers, often persisting for many weeks, necessitating the prolonged disinfection of the urine after convalescence.

DR. WILLIAM OSLER, of Baltimore, discussed the

CLINICAL DIAGNOSIS.

He said that in severe cases death might occur before the Widal reaction could be obtained, and even without the characteristic intestinal lesions being visible at autopsy; on the other hand, in the short and mild cases the Widal reaction often proved exceedingly useful. Perhaps the greatest liability to err in diagnosis was in those cases exhibiting a cerebro-spinal, pulmonary or renal localization. Chills were exceedingly common and should not be looked upon as, in themselves, evidence of malarial infection. It was remarkable how many physicians insisted on diagnosticating malaria in cases of continued fever. He would advise all physicians practising in the Northern States to make it a rule to suspect typhoid fever whenever there was a continued fever of six or seven days' duration.

DR. EDWARD G. JANEWAY, of New York, described a number of interesting cases. He cautioned physicians to be especially on their guard against the sudden development of a suicidal tendency in typhoid patients. He looked upon herpes labialis as so very rare in typhoid that if it were present he would feel like at once revising his diagnosis. In three instances he had known tetany to be associated with typhoid.

DR. WILLIAM H. THOMSON, of New York, presented

STATISTICS OF TYPHOID FEVER AT THE ROOSEVELT HOSPITAL FOR TEN YEARS.

These figures were collected from the experience in his wards for the ten years ending September, 1899. The total number of cases was 368, 275 being males. The total number of deaths was 25, or 6.8 per cent. As a rule, diarrhea had been mild, and had developed after the first week in only 8.7 per cent. This infrequency of diarrhea was attributed to giving up the old beef-tea diet and substituting an exclusive diet of milk with an equal quantity of lime-water. Pneumonia had occurred in seven per cent. and bronchitis in eight per cent. Relapses had occurred in 15 per cent. Phlebitis had been noted in seven cases. The medication had consisted in the use of pepsin and bismuth, and, when the tip of the tongue became dry, of ten to twenty minims of spirits of turpentine every three hours. The cool bath had been used whenever the temperature had reached 103° F., and rectal irrigation had also been employed with the idea of increasing elimination.

TYPHOID FEVER IN THE MASSACHUSETTS GENERAL HOSPITAL DURING THE PAST FIFTY YEARS.[1]

DR. REGINALD FITZ, of Boston, presented this historical sketch of the different methods of treatment employed in this hospital, and the different dietary of the corresponding periods. From 1839 to 1869 the diet had consisted of liquid farinaceous food; from 1879 to 1889 it had been of the beef-tea order, and from 1889 to 1899, chiefly milk. Since 1888 baths, often having a temperature as low as 65° F., had been frequently given. The author concluded that the average mortality had not changed materially, that relapses and complications were as frequent as ever and that it was perfectly safe to permit considerable latitude in diet.

DR. A. A. SMITH, of New York, spoke of

SOME PHASES OF TYPHOID FEVER AS SEEN IN BELLEVUE HOSPITAL.

Out of a series of 104 cases there had been 10 deaths, or a mortality of 9.6 per cent. Chills were present in 57 per cent. and the eruption in 77 per cent. Out of 59 cases, the Widal reaction was present in 82 per cent. and the diazo reaction in 74 per cent. He made it a rule not to give his typhoid-fever patients solid food until the temperature had remained at the normal for a week or ten days.

DR. A. JACOBI, of New York, spoke of

TYPHOID FEVER IN CHILDREN.

He advised keeping the lips and tongue clean, and when the tongue was fissured making applications of a one- or two-per-cent. solution of silver nitrate. The bowel should be frequently irrigated with water at 100° F., bismuth, with sulphocarbolate of zinc or salol, given internally, and the tendency to stupor combated by cold affusions while the body is immersed in water at 95° F.

DR. DE LANCEY ROCHESTER, of Buffalo, contributed a paper on the

LOCAL, NON-SURGICAL TREATMENT OF THE INTESTINAL TRACT,

[1] See page 509 of the Journal.

in which he directed attention to the need for carefully cleansing the mouth, and to the cleansing of the bowel by repeated irrigations and by the use of calomel purges at intervals of five or six days.

Dr. W. W. Keen, of Philadelphia, discussed the

TREATMENT OF PERFORATION OF THE BOWEL IN TYPHOID FEVER.

He stated that up to last year 83 cases had been subjected to operation, with a recovery rate of 19.3 per cent., whereas since that time there had been 67 additional cases, with a recovery rate of 26.9 per cent. While, of course, the operation should be undertaken as early as possible, it was unwise to operate during profound shock. An important improvement had been introduced by Cushing, namely, the use of cocaine anesthesia instead of a general anesthetic.

Dr. A. T. Hubbell, of Buffalo, closed the discussion by a few brief remarks on the

EYE COMPLICATIONS IN TYPHOID FEVER.

Among those enumerated perhaps the most common were catarrhal conjunctivitis and lacerations of the cornea.

THIRD DAY.

Dr. Stephen Smith, of New York, presented the report of the

COMMITTEE ON QUARANTINE,

which favored supporting the McCaffrey Bill for the establishment of a national bureau of health. The report was adopted.

TWO CASES OF LARGE RETAINED HERNIA.

Dr. Henry O. Marcy, of Boston, reported these cases, which served to illustrate the great danger arising in such cases from excessive intra-abdominal pressure.

W. B. De Garmo, of New York, said that this danger could be greatly diminished by keeping such patients in bed, while efforts were made to reduce the hernia as much as possible.

THE ADMINISTRATION OF NITROUS OXIDE WITH AIR OR WITH OXYGEN.

Dr. Thomas L. Bennett, of New York, read this paper. The safety of this method of inducing general anesthesia was proved by the absence of recorded cases of serious disturbance of the heart, lungs or kidneys. Regarding the mode of administration, the speaker stated that if air were rigidly excluded narcosis would be secured in about one minute, but it would be associated with evidence of marked asphyxia, while if much air were admitted, the patient would become much excited. The ideal method was a definite combination of nitrous oxide and oxygen obtained through the use of Hewitt's apparatus. This anesthetic was most suitable for the following conditions: (1) Where ether or chloroform anesthesia was specially risky; (2) for very short operations. Thus, it could be used with advantage in opening abscesses, incising sinuses, doing curettings, breaking up joint adhesions and in dilatation of the sphincter ani.

THE SPHERE OF DRAINAGE IN SURGERY OF THE APPENDIX.

Dr. William S. MacLaren, of Litchfield, Conn., read a paper with this title. He said that where the suppuration about the appendix took the form of a localized abscess, the treatment should be the same as for abscesses in other parts, but where the pus had entered the general abdominal cavity drainage was impracticable and inadvisable. Gauze drainage was even worse than the use of a glass tube. The proper treatment, in his opinion, consisted in a thorough washing out of the abdominal cavity with salt solution, then the use of peroxide of hydrogen as a disinfectant, and finally filling the cavity with saline solution before complete closure of the wound. By this method the absorption of infective material was more gradual, so that the system was not in danger of being overwhelmed by it, and the surface of absorption was greater. Two cases of a severe type were reported, in which he had used this plan of treatment with much success.

APPENDICITIS: ITS TREATMENT FROM A MEDICAL AND SURGICAL STANDPOINT.

Dr. Thomas B. Scully, of Oneida County, in this paper directed attention more particularly to the medical treatment. He recommended giving in the early stages small doses of calomel and soda, and using high enemata. He also valued highly the administration, hypodermatically, of a combination of morphine and strychnia, the object being to allay the nervous irritability without interfering with intestinal peristalsis or locking up the secretions, as would occur with morphia alone, or particularly if the combination of morphia with atropia were used. If, however, signs of improvement were not observed in the course of twenty-four hours, a surgeon should be called in consultation.

Dr. Rochester thought the treatment just outlined was illogical. His personal preference was for the old opium treatment of peritonitis in these cases during the early stages.

CHOLANGIOSTOMY.

Dr. Merrill Ricketts, of Cincinnati, read a paper on this operation, reporting two successful cases. This operation, he said, was likely to be required in the following conditions: (1) When the gall-bladder is contracted down on one or more concretions, or when it is desirable to explore an atrophied biliary cyst that cannot be sutured within the abdominal incision, and when cholecystotomy is not considered expedient; (2) when, from any cause, the lobe of the liver is too large to allow of the gall-bladder being brought into the abdominal incision for suturing; (3) when one or more concretions have escaped from the biliary duct into the liver substance; (4) when such concretions have become encysted or impacted within the intrahepatic ducts; (5) when the common and cystic ducts have become occluded by a new growth, and the gall-bladder so much atrophied as to preclude either cholecystenterostomy or cholecystotomy, and (6) when, before opening the peritoneal cavity, it is found that an hepatic abscess has ruptured into the biliary tract, filling the gall-bladder with pus that cannot freely escape through the common duct.

THE DIFFERENTIAL DIAGNOSIS BETWEEN CHRONIC JOINT DISEASE AND TRAUMATIC NEUROSIS.

Dr. Reginald H. Sayre, of New York, read this paper. He summarized the subject as follows: (1) Neurosis is apt to follow injury sooner than joint

disease; (2) the temperature is usually lowered in a neurosis and raised in inflammation of a joint; (3) the local temperature is usually much lower in a neurosis than in an arthritis; (4) atrophy is much more rapid after injury to a nerve, and (5) true muscular spasm is not present except in joint disease, though it may be simulated.

SUBNORMAL TEMPERATURE.

DR. LEROY J. BROOKS, of Norwich, discussed the influence of various toxemias and auto-intoxications in producing subnormal temperature, and suggested that by the persistence of a subnormal temperature the physician might, at times, be led to suspect the recurrence of attacks of melancholia, epilepsy and dipsomania.

DR. E. D. FISHER, of New York, said that there had been nothing in his experience to lead him to think that the temperature record would give the physician much help in detecting the approach of attacks of melancholia and similar states, nor was this experience exceptional, according to the statements of those having charge of hospitals for the insane. The chief factor determining the temperature was the amount of bodily activity; hence, after a series of rapidly recurring epileptic seizures the temperature might be slightly elevated, while in melancholia and stuporous insanity, owing to the slight muscular activity, the temperature was apt to be subnormal.

ETIOLOGICAL RELATION OF AUTO-INFECTION AND AUTO-INTOXICATION TO DISEASES OF THE EYE.

DR. A. A. HUBBELL, of Buffalo, was the author of this paper. He stated his belief that retinitis might always be looked upon as the result of some blood poison, and the same was true of optic neuritis. Sympathetic ophthalmia, in his opinion, was another example of auto-infection.

THE EFFECTS OF CERTAIN OCCUPATIONS ON THE PHARYNX.

DR. SEYMOUR OPPENHEIMER, of New York, presented in this communication the results of an analysis of 50 cases. This showed that the inhalation of vapors, chemical agents and dust was the chief exciting cause of catarrhal affections of the larynx and was dependent on occupation. Persons entering such occupations quite young, and those having previously abnormal states of the upper air passages, suffered most severely.

THE TOPICAL APPLICATION OF IODOFORM IN THE TREATMENT OF TUBERCULAR PERITONITIS.

DR. ZERA J. LUSK, of Wyoming County, described in this communication the good results which he had observed from the local application of an "iodoform poultice."

AN EPIDEMIC OF INTERCOSTAL NEURALGIA.

DR. THOMAS F. REILLY, of New York, described, under this heading, a series of cases seen by him in New York City last summer at a time when, according to the report of the weather bureau, there were no unusual meteorological conditions. The disease ran its course in a few days, without the usual tender point observed in ordinary intercostal neuralgia, but associated, in many instances, with a herpes zoster along the intercostal nerves, or with an eruption of herpes labialis. Quinine had no restraining effect. The greatest relief had been afforded by strapping the chest with adhesive plaster.

SUPPURATIVE ETHMOIDITIS AND ITS TREATMENT.

DR. FRANK S. MILBURY, of Brooklyn, read this paper. He stated that the antrum was involved in over 50 per cent. of the cases. Although he had met with suppurative ethmoiditis rather frequently, it had been decidedly exceptional to observe necrosis after it. The treatment should consist in cleansing the nasal cavities and removing obstruction to drainage.

DR. R. C. MYLES said that double chronic suppurative ethmoiditis was commonly the result of polypoid degeneration of the ethmoid bone. If suppuration occurred, it was essential that the polypoid growth be removed and good drainage through the cells be established. He had found drainage by external incision more satisfactory than the older internal method.

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY.

AUGUSTUS THORNDIKE, M.D., SECRETARY.

THIS Society held its annual meeting October 26, 1899, in the Boston Medical Library.

The Treasurer's report showed:

Balance October 17, 1898		$1,514 78
Receipts		8,757.59
		10,272.37
Expenditures	9,783.32	
Balance October 17, 1899	489.05	
		10,272.37
The amount of funded property is		$49,000

The Council recommended for election the present officers: Drs. D. W. Cheever, President; James C. White, Vice-President; Wm. L. Richardson, Treasurer; and Augustus Thorndike, Secretary. Also for three trustees: Drs. Edward Cowles, of Waverly, Francis H. Brown, of Boston, and Hasket Derby, of Boston.

The list of beneficiaries for 1898 comprised sixteen persons or families. There had been two deaths.

The President, Dr. Cheever, spoke of the sad loss sustained in the death of Dr. Francis Minot, of Boston, one of the original incorporators of the Society, and always its firm supporter. Dr. Minot had served faithfully as treasurer for thirty-two years. On motion of Dr. John P. Reynolds it was resolved that

"The Massachusetts Medical Benevolent Society gratefully records its warm appreciation of the service rendered by the late Dr. Francis Minot, and its consciousness of the deep loss which the Association, in common with the profession at large, have sustained in his death.

"A founder of the Society, he remained ever one of its heartiest and most intelligent promoters, showing by his zeal for its interests only one more instance of that earnestness for the general good which marked his entire professional life, and will always endear his memory to his associates and colleagues."

After some discussion on the desirability of enlarging the membership, in order to reach a greater number of deserving beneficiaries, it was voted, on motion of Dr. C. C. Williams, that a statement to that effect be printed in the *Boston Medical and Surgical Journal.*

STATEMENT.

The Massachusetts Medical Benevolent Society has about two hundred and fifty members. The admission fee is five dollars, the annual assessment only two dollars. Twenty-five dollars in one payment constitutes life membership. Those who give fifty dollars, or more, are called benefactors. Any member who shall become a benefactor, or the widow of any such member, shall be entitled to receive the interest of the sum given by him, as an annuity, whenever his circumstances shall, in the opinion of the council, be such as to entitle him to claim such annuity.

The aid of this institution shall be granted for the relief of those who are, or have been, members of this Society, and their families, and of other members of the medical profession who are, or have been, inhabitants of Massachusetts, their widows and children.

No annuity is granted under sixty years of age, except under peculiar circumstances.

Under these regulations annuities are now granted to sixteen beneficiaries, of whom two or three are physicians, and the rest their widows or children. Gratuities of moderate amounts are also given yearly, to emergencies and to distressed applicants.

The Society desires to increase its membership and to widen its benefactions. The cities and larger towns of Massachusetts are especially invited to contribute. Many physicians are able to afford the small annual fee, and to those who donate a large sum it is a species of life insurance should they need the interest of their money.

David W. Cheever, M.D., *President.*

Recent Literature.

Anemia and Some of the Diseases of the Blood-Forming Organs and Ductless Glands. By Byrom Bramwell, M.D., F.R.C.P. (Edin.), F.R.S. (Edin.), etc. Edinburgh: Oliver & Boyd. 1899.

This octavo volume of four hundred and forty-five pages is divided into thirteen chapters, and treats of anemia, chlorosis, pernicious anemia, leucocythemia, Hodgkin's disease, Addison's disease, myxedema, exophthalmic goitre, acromegaly — a very interesting group. Some of these affections have been brought to the field of general clinical observation within the last ten or fifteen years, on others much new light has been thrown during that time, while some still remain among the medical puzzles. The author gives a table setting forth the relative frequency of these diseases in 14,777 consecutive cases which came under his notice, as follows: chlorosis 314, pernicious anemia 45, leucocythemia 5, Hodgkin's disease 12, Addison's disease 12, myxedema and sporadic cretinism 40, exophthalmic goitre 79, acromegaly 3. The value of these figures as representing actual frequency is, as Dr. Bramwell points out, not a little affected by the fact that a considerable proportion of the cases were seen in consultation practice. This fact doubtless accounts for the large relative number of cases of pernicious anemia. On the other hand, the proportion of cases (five) of leucocythemia is not large, and certainly seems small, if compared with the statements of Stengel's personal experience ("Twentieth Century Practice") of 15 cases in four years and 12 cases in one year in Philadelphia. Stengel quotes from Limbeck to show how much the frequency of leukemia varied in different series of 10,000 cases, from 1 to 9.89.

The chapter on Pernicious Anemia, occupying more than eighty pages, about a fifth of volume, is of especial interest from the considerable number (45) of cases reported, and from the careful study which the author has made of the disease. Six cases are reported of patients over sixty years of age. Dr. Bramwell reports one case, previously recorded in the *Edinburgh Medical Journal*, November, 1877, and again in his "Atlas of Clinical Medicine," of recovery (temporary) under arsenic, the patient remaining well for twelve years and finally dying after a second relapse, thirteen years and nine months after the first attack. Dr. Bramwell regards the administration of arsenic as altogether the most hopeful treatment and thinks the prognosis may be measured by the tolerance of this drug. He attaches great importance to the more or less continued treatment in small doses after apparent recovery, and "is not without hope that if arsenic is steadily given for long periods of time after (temporary) recovery, the tendency to relapse may perhaps be prevented." As to prognosis, Stengel takes the ground that though always extremely grave it is not invariably hopeless.

Hale White reports a case remaining in good health eleven years after recovery (temporary?) under the use of arsenic. Bramwell, who first pushed the arsenic treatment, was led to do so from the observations on the fatty condition of the heart.

Several chapters of the book contain frequent references to Cabot's book on the blood. The volume is a very presentable one, and is a valuable and serviceable addition to the subjects with which it deals.

Nursing: Its Principles and Practice for Hospital and Private Use. By Isabel Adams Hampton, Graduate of the New York Training School for Nurses attached to Bellevue Hospital; late Superintendent of Nurses and Principal of the Training School for Nurses, Johns Hopkins Hospital, Baltimore, Md., etc. Second edition, revised and enlarged. Pp. 512. Philadelphia: W. B. Saunders. 1898.

The second edition of this compend on nursing is published without material change from the earlier edition. A chapter has, however, been added on the division of work, extending over three years of instruction, which is of interest as showing the rapid development in the conception of the scope of a nurse's training. In fact, the amount of knowledge expected of the modern skilled nurse is already quite appalling to a conservative onlooker. Here, for example, are some of the topics discussed in junior class lectures: the skeleton, gross, microscopic and chemical structure; principles of modern surgery; an outline of bacteriological methods. It is hardly to be supposed that such instruction is other than superficial, but it shows the tendency toward the extension of the nurse's training, which is everywhere apparent, and which we do not for a moment deprecate. The question will, however, arise, Where is it all going to end?

The volume is conveniently divided into chapters, which discuss systematically and in detail the various procedures with which a nurse should familiarize herself in the care of the sick. The binding, type and illustrations are satisfactory.

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THE PROPOSED ENLARGEMENT OF BOSTON'S INSANE HOSPITAL.

A CLASS of dependents which every community is called upon to provide for is its insane. Whether or not insanity is increasing as civilization progresses is certainly a question still in doubt, and one regarding which statistics are peculiarly likely to be fallacious, but, however this may be, the fact remains that the number is now sufficiently numerous to demand more ample provision than has yet been made. It is well known that at present about two-thirds of Boston's insane are obliged to go to State institutions at a very considerable cost to the city, not to speak of the expense to members of their families who frequently are ill able to afford the expense of a journey to Worcester or Taunton or Northampton to see their afflicted relatives. The consequence is that the city and its citizens are every year putting out money which should more properly be expended within its own confines, in providing adequate hospitals near at hand. Not only is there inadequate accommodation under the present arrangement, but many patients who should be properly cared for in hospitals for the insane are still kept at almshouses to the detriment of other inmates. In an enlightened system of classification, space should certainly be provided for the mentally deficient from whatsoever cause; institutions in which the insane are, nominally, not treated should not be burdened with the practical responsibility of large numbers of helplessly and hopelessly demented individuals, who are always a disturbing element when associated with persons not so afflicted. A proper classification demands their isolation and treatment in wards devoted to their care. Under such a plan they may be cared for with the maximum of efficiency and the minimum of expense, whereas their continued presence in almshouses where their stay is merely tolerated is unfair to other inmates and quite subversive of proper discipline. Particularly is this true in the hospital department of such institutions, in which proper methods of isolation are not yet forthcoming. One noisily demented patient is quite capable of disturbing an entire ward to the extent of rendering proper hospital care of other patients, perhaps critically ill, quite out of the question, to say nothing of putting a burden upon the nurses which they should not be called upon to bear.

Reform in this matter is imperatively needed and is gradually being effected. Either we must have totally distinct wards for insane, among which we include demented patients, at our city almshouse, or else we must transfer them to other institutions adapted to their care. If there is not room for them at the insane hospitals, as is frequently said, that in no way alters the principle, but simply forces more urgently upon us the absolute need that provision should be made as soon as possible, in order that a proper classification may be consistently carried out. The efficiency of the almshouse and its hospital would thereby be greatly increased, and the insane hospitals would experience no difficulty in caring for an additional number of the simply demented class.

We are glad to note that the Trustees of the Boston Insane Hospital have voted to recommend the purchase of more land, a vote which it is to be hoped the Board of Aldermen will approve. It is the hope of the trustees that enough land may be secured and sufficient buildings erected to meet all the demands of the city. Legislation of this sort is important from every point of view; it means the expenditure of money, but such expenditure is to be regarded rather as a profitable investment than as an experiment, the returns from which are in doubt. Such enlargement of the city's hospital work must inevitably come sooner or later, and no doubt steps in that direction taken now will be more advantageous, from a financial as well as from a humanitarian point of view, than if indefinitely delayed. We are entirely in accord with the recent editorial comments of the *Boston Evening Transcript*, when it says, in part:

"To be without adequate accommodations in any branch of a great city's hospital work reflects upon the public spirit and the municipal enterprise of that city. Yet that is the case in Boston to-day. The hospital for the insane was a great advance as far as it went. But it now only provides for a part, and the smallest part, of our needs. . . . Hospital experts have pronounced the present location a very suitable one for a hospital on a metropolitan scale, provided sufficient land could be obtained, and that decision now rests with the Board of Aldermen, who will doubtless best satisfy their constituents and best serve the city by carrying out the recommendations which the trustees have made. Ample provision for its unfortunate, whether sick, injured, insane, or otherwise physically or mentally afflicted, is one of the first duties to which a great city should devote itself."

Boston has already much reason to feel a just pride in its public charitable institutions, and the time has certainly come for it to assume the entire responsibility for its insane.

OUR ATTITUDE TOWARD INCURABLE DISEASE.

FROM time to time when our spirits are low and our view of life somewhat distorted, we are apt to feel that continued life under conditions of hopeless disease is something little to be desired. From this frame of mind it is a simple step to an attitude in which we transfer what we might think desirable for ourselves to others, whose frame of mind is quite unknown to us. It is easy, after a visit to an almshouse, or an institution for feeble-minded children, to grow pessimistic and condemn, in our mind, the inmates to a speedy death as the happiest outcome of their supposed sufferings, quite regardless of their own feelings in the matter. On the other hand, when our mood is in a lighter vein, we can hardly avoid being impressed with the general air of contentment noticeable in a well-ordered institution of whatsoever sort. Contentment is certainly the rule and dissatisfaction the exception. We are therefore convinced that from the patient's point of view, whatever his disease, life remains worth living under any and all circumstances. He may be unreasonable in his preference from another's more enlightened point of view, but it must evidently be respected to the end.

A physician's duty in cases of fatal disease is so clear that any discussion of it would seem quite superfluous did we not occasionally hear advanced, apparently with seriousness, the theory that life under certain circumstances of incurable disease is a thing to be lightly treated. Nothing is more absolutely abhorrent than the occasionally reported experiments on persons whose outlook for life is limited, and whose remaining years or months are therefore regarded as a legitimate opportunity for experimental research. Nevertheless such things have undoubtedly happened, and the so called justification has been that the approach of death removed responsibility. It is hard to find terms to express one's condemnation of this wholly unjustified attitude, which fortunately is rare. The *Medical Press and Circular* admirably comments on the matter as follows, apropos of a circumstance which had not before been brought to our attention:

"A silly paragraph has been going the round of the press to the effect that a Judge of the Supreme Court of Connecticut, having stated that for a physician to shorten the life of a person afflicted with an admittedly incurable disease was not a criminal offence, a certain doctor, who shall be nameless, has made it publicly known that he is willing to act on this *obiter dictum*. It is hardly necessary to point out that such an act would be deliberate murder, punishable as such in every country in the world. We are all afflicted with an incurable disease — life, to wit — and the mere question of the mean prospect of life does not affect the principle involved."

The argument summed up in the last sentence is incontrovertible and well worthy the serious consideration of all those who are inclined to be radical in this matter. If life is worth living at all, it is certainly worth living to the very end, a position from which the conscientious physician has no possible escape in the care of the cases which he is called upon to treat.

MEDICAL NOTES.

EPIDEMIC OF DENGUE IN PHILIPPINES. — A report comes from Manila, through Chief Surgeon Woodhull, that a sharp and quite general epidemic of dengue has prevailed in Luzon for some months past, and that it appears to be spreading to the south.

CEREBRO-SPINAL MENINGITIS AS COMPLICATION OF MEASLES. — England reports (*Montreal Journal*, November, 1899) a case of cerebro-spinal meningitis complicating measles, the bacteriological diagnosis being made from a meniugococcus culture taken from the navel.

SMALL-POX IN A UNITED STATES REGIMENT. — It is reported that small-pox has broken out in the Forty-eighth Regiment (colored) at San Francisco. Three cases have thus far developed, all of which are progressing favorably. No fear of an epidemic is entertained.

ANOTHER CASE OF NEGLECT BY CHRISTIAN SCIENTISTS. — It is reported from Sioux City, Ia., that a child, whose parents profess Christian Science, has recently died of diphtheria, unattended by a physician. The health authorities are investigating the case, and arrests are likely to follow.

THE RAVAGES OF ANTS IN MANILA. — A recent number of the *Indian Lancet* publishes the following extraordinary statement, with what degree of seriousness we are at a loss to say: "Swarms of ants have attacked the mail bags in Manila, and swallowed the letters. This is bad for the people and good for the ants. They also got hold of the paper money sent over to pay the troops with, and swallowed a million dollars' worth of this material." If this be true our Government will have still another responsibility thrust upon it, in keeping inviolate the mails of our new possession, to say nothing of its money.

TWO UNUSUAL VERDICTS. — A Massachusetts jury has recently returned a verdict against a railroad company for $30,000, as damages for personal injuries sustained by the plaintiff. This verdict is one of the largest ever granted in this State. We note also that a Nebraska jury has recently rendered a verdict for the full amount of $5,000 in a suit against a railroad for the death of a man, occurring in an accident. The verdict is considered unusual, inasmuch as the man was riding on a pass and had signed the usual agreement waiving all claims for damages. The train, also, was derailed wilfully by a person now serving a sentence for the crime. The cases will probably be appealed, and one can have no doubt that a clearer appreciation of justice will prevail.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, November 22, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 80, scarlatina 36, measles 27, typhoid fever 16.

DIPHTHERIA IN BOSTON AND VICINITY. — The health report of Boston shows that during the past week there have been about twice as many cases of diphtheria as there were at a corresponding time last year, but the number of cases was exceptionally low both last year and the year before. Several cases of diphtheria have recently been reported in Brookline, but the Board of Health has experienced no difficulty in handling the situation. The cases which occurred at the Country Club are believed to have been traced to the milk supply.

THE NEWTON HOSPITAL. — During the past two years improvements and additions to the hospital have been made, amounting to about $50,000. The cost of maintenance has thereby been increased about 30 per cent.

A NEW ALMSHOUSE FOR SOMERVILLE, MASS. — A new building for the dependent poor of Somerville is about to be opened in that city. It is a large and well-appointed structure, and is much needed.

SMALL-POX AT CHELSEA, MASS. — Four new cases have been discovered within the last few days. Free vaccination has been discontinued, between 1,100 and 1,200 having availed themselves of the opportunity.

TYPHOID FEVER AT COLLINSVILLE, MASS. — Strict care regarding the proper sterilization of water used for household purposes has checked the epidemic, which, as reported in our last issue, had begun to assume alarming proportions. No new cases have been reported for six days, and but two deaths have thus far occurred.

SCARLET FEVER AT HARDWICK, MASS. — There is an epidemic of scarlet fever in this small town. Twenty cases have been reported during the month of November.

FREE VACCINATION AT MALDEN. — Since free vaccination was begun by the Malden Board of Health more than five hundred persons have been vaccinated by City Physician J. W. Proctor.

HOLY GHOST HOSPITAL FOR INCURABLES. — The first anniversary of the opening of the new hospital building for incurables at Cambridge, Mass., has recently been celebrated. An address was made by Prof. Charles Eliot Norton, of Harvard University, who has been one of the most earnest workers in behalf of the institution.

NEW YORK.

ANNUAL MEETING OF STATE ASSOCIATION OF RAILWAY SURGEONS. — The ninth annual meeting of the New York State Association of Railway Surgeons was held at the New York Academy of Medicine on November 16th, and the following officers were elected: President, J. S. Eddy, Olean; First Vice-President, W. R. Townsend, Manhattan, N. Y.; Second Vice-President, H. P. Jack, Canisteo; Secretary, C. B. Herrick, Troy; Treasurer, T. D. Mills, Middletown; Chairman of Executive Committee, George Chaffee, Brooklyn, N. Y. Papers were read by a number of members, and the special feature of the meeting was a discussion on Physical Fitness of Railway Employees, which was participated in by several invited guests. R. R. Richards, of the Chicago and Northwestern Railway, stated that the report of the Inter-State Commerce Commission for 1898 showed that 6,895 lives had been lost and 40,882 persons injured in railway accidents, and that many accidents had come to his notice which were directly attributable to the physical unfitness of employees. Dr. G. P. Conn, of Concord, N. H., chief surgeon of the Boston and Maine Railroad, directed attention to the proper bases for rejection or for special precautions, and L. L. Gilbert, of Pittsburg, Pa., assistant counsel of the Pennsylvania Railroad, in a paper on the "Medico-Legal Features of Physical Unfitness," expressed the opinion that the physical examination and a record of the condition of employees would save the companies from many of the numerous fraudulent claims for injury constantly being attempted by unworthy employees.

HOSPITAL SATURDAY AND SUNDAY COLLECTIONS. — At a meeting of the Trustees of the Saturday and Sunday Association held November 14th, the general agent reported that the preparatory work for the annual collection in the churches, synagogues, trades and exchanges was well advanced, and expressed the hope that the amount contributed, which last year was somewhat more than $70,000, would this year reach a total of $100,000. The Association represents 38 hospitals, and according to the last annual reports of these hospitals to the Association they cared for 34,740 patients (of whom 21,052 were free patients), in addition to 300,995 out-patients in their dispensary departments. The whole number of hospital days aggregated 1,247,020, of which 730,606 were free days. The total cost of the hospital service in these institutions last year was $1,653,038. To meet this there were incomes from invested funds, paying patients, and city applications of $896,598; leaving a balance of $756,449 for current expenses to be derived from the contributions of the benevolent.

NEW BUILDING CODE CONDEMNED. — In the annual report of the Charity Organization Society, just published, the features of the new Building Code bearing on the construction of tenement houses are strongly condemned, and agitation for the amendment of the tenement laws by the State Legislature is urged.

SURGEONS AND NURSES FOR THE "MAINE." — A party of three surgeons, two from New York and one from Philadelphia, and five female trained nurses, who have been engaged for service on the hospital ship

Maine, sailed for England on the Atlantic Transport liner *Mesaba* on November 12th. On the *Manitou*, which sailed on November 19th, were Dr. Hastings and twenty-nine dispensers, orderlies and male nurses.

Army Rations in Tropical Countries. — Dr. L. L. Seaman, of New York, formerly surgeon of the First Regiment, United States Volunteer Engineers, whose name has become identified with the subject of a change in the regulation army ration for troops serving in the tropics, has just returned from the Philippines, and is preparing a report for the Secretary of War and the Surgeon-General. His observations, which have been very extensive, have convinced him that by far the largest number of soldiers who have lost their lives in the Philippines have died from some form of intestinal trouble which could have been prevented by a diet suited to the climate, and he regards it as entirely unreasonable to supply the troops in the tropics with the same rations as those serving in Alaska. He states that the ration of the British troops in India contains from four to six ounces less of meat and two ounces less of bread than the United States Army ration, while considerably more rice is used, and yet hygienists are generally of the opinion that the allowance of heat-producing foods in India is far too great.

Two Cases of Plague in New York Harbor. — On the steamer *J. W. Taylor*, which arrived at quarantine on November 18th from Santos, Brazil, were two cases of bubonic plague, the first cases of the disease to reach the port of New York. The captain of the ship, who was one of the patients, reported that the steward, a young Englishman of twenty-two, had died of the plague and was buried at sea on November 7th. Later in the day a meeting of the Quarantine Advisory Board, consisting of Drs. E. G. Janeway, T. M. Prudden, J. D. Bryant, G. L. Peabody, H. M. Biggs, and other prominent physicians of the city, was held. Health Commissioner John B. Cosby was also present, and the most efficient measures for the prevention of the spread of the disease were discussed and acted upon. It was ordered that the two patients be transferred to the hospital on Swinburne Island, and the rest of the crew sent to Hoffman Island for observation, and that the vessel and cargo be disinfected in the most thorough manner. Three weeks previously the health officer's agent at Santos had cabled that the plague had made its appearance there, so that the quarantine authorities were fully prepared for the arrival of cases from that port, from much which coffee is shipped to New York. Dr. W. H. Parke, of the City Health Department, took some material from the glandular swellings in the axillæ and groins of the patients for examination at the Department laboratory, and on November 19th, Dr. Biggs, the director of the laboratory, made the following report: "The bacteriological examinations thus far made by Dr. Parke apparently show that the contents of the broken-down buboes do not now contain any living germs. It is possible that some may develop later in the cultures. The microscopical examinations were also rather negative. These negative results were such as might be expected in plague at the stage of the disease presented in these men, and would be very unusual in other conditions. They, therefore, afford some confirmatory evidence as to the existence of plague." According to the latest reports, the patients appeared to be well on the road to recovery.

Miscellany.

THE PROPER ENDOWMENT OF THE SCIENTIFIC DEPARTMENTS OF MEDICAL SCHOOLS.

In the recent address[1] at the opening of the session of the Medical Faculty of McGill University, upon which we commented editorially in the last issue of the *Journal*, Dr. Osler makes the following timely remarks upon the above subject:

"Upon one feature in the organization of a first-class school permit me to dwell for a moment or two. The specialization of to-day means a group of highly trained experts in the scientific branches, men whose entire energies are devoted to a single subject. To attain proficiency of this sort much time and money are required. More than this, these men are usually drawn from our very best students, with minds above the average. For a majority of them the life devoted to science is a sacrifice; not, of course, that it is so felt by them, since the very essence of success demands that in their work should lie their happiness. I wish that the situation could be duly appreciated by the profession at large, and by the trustees, governors and the members of the faculties throughout the country. Owing these men an enormous debt, since we reap where they have sown, and garner the fruits of their husbandry, what do we give them in return? Too often beggarly salaries and an exacting routine of teaching which saps all initiative. Both in the United States and Canada the professoriate as a class, the men who live by college teaching, is wretchedly underpaid. Only a few of the medical schools have reached a financial position which has warranted the establishment of thoroughly equipped laboratories, and fewer still pay salaries in any way commensurate with the services rendered. I am fully aware that with cobwebs in the purse not what a faculty would desire has only too often to be done, but I have not referred to the matter without full knowledge, as there are schools with large incomes in which there has been of late a tendency to cut down salaries and to fill vacancies too much on Wall Street principles. From Harvard comes a most encouraging announcement. By the will of the late Dr. Calvin Ellis the Medical School receives nearly half a million dollars, the income from which is to be used in raising the salaries of the scientific chairs to $5,000 per annum. And not for relief of the pocket alone would I plead. The men in charge of our Canadian laboratories are overworked in teaching. A well organized staff of assistants is very difficult to get, and still more difficult to get paid. The salary of the professor should be in many cases that of the first assistant. When the entire energy of a laboratory is expended on instruction,

[1] Montreal Medical Journal, November, 1899.

research, a function of equal importance, necessarily suffers. Special endowments are needed to meet the incessant and urgent calls of the scientific staff."

The sum to be immediately realized from the bequests of Dr. Calvin Ellis and his sister, Miss Ellis, though very considerable, will not be as large, we regret to learn, as stated by Dr. Osler. Moreover, the salaries of the three scientific chairs in the Harvard Medical School, anatomy, physiology and pathology, which Dr. Ellis had in mind, have already been raised from other resources to the sum of $5,000 per annum. The income of the bequest will, however, doubtless be applied in accordance with the purposes of the testators directly to the advancement of the work of these departments in the medical school, and should be of great value in fostering those researches which Dr. Osler, in common with other broad-minded and progressive teachers, regards as so vitally important in their bearing upon general medicine.

CHANCES OF DEATH IN WAR.

WE have recently had occasion to realize how much more deadly is the effect of disease in an army than the enemies' bullets. The extent, however, to which this is true must be a source of surprise. The following statistics we take from a daily paper:

The most competent authorities state that on the average it takes a ton of shot to kill one man. For instance, it has been estimated that in the Crimean War the British and French troops fired between them the enormous amount of 45,000,000 projectiles, resulting in the death of only 51,000 Russians, while on their side the czar's adherents killed some 46,000 of the allies with an expenditure of over 50,000,000 projectiles, this representing a death for every 1,087 shots fired.

The American Civil War returns, which were got out with very great care, showed that the loss of both the Federals and Confederates was about seven per cent. of the forces engaged, to bring about which involved the expenditure of nearly 22 hundred-weight of ammunition per man.

At the siege of Mezieres, in the Franco-German War, the Prussians threw no fewer than 197,000 projectiles into that town, but, strange to say, less than 400 people were killed by them. At Trouville, two people only were killed after some 27,000 odd shells had been discharged. At Sedan, however, the aim of both the Germans and the French showed a marked improvement, for after 240,000 projectiles had been fired nearly 9,000 French and Prussians were killed.

For the Spanish-American War the returns showed a tremendous amount of shot and shell fired for very meagre results. Of course, in this case, although the mortality was not great, the damage to earthworks, fortifications and government buildings generally was enormous. When the American marines landed at Santiago, during a fusillade upon the enemy lasting two nights, the machine guns and rifles alone accounted for the consumption of over 25,000 rounds of ammunition. Sixty-eight dead Spaniards were found as a result of this enormous expenditure of ammunition.

Great Britain's experience in recent wars has been very little, if any, better than the results just recorded. Take, for instance, the Chartered Company's expedition into Matabeleland. Every one will remember how the warriors of Lobengula were mowed down by the Maxim guns like skittles, but even in this instance, which perhaps is the most effective on record, as the impi advanced on the British lines in solid masses it would have puzzled a blind man to miss shooting some of them. The mortality was very small, considering the vast number of cartridges expended, but this is accounted for by the fact that on examination some of the dead bodies contained more than 50 bullets each. On another occasion, at an attack on a laager some twenty miles south of Bulywayo, 14,000 rounds of ammunition were disposed of with a result of 346 dead Matabele.

Military authorities now regard rapidity of fire as being more essential than range and precision, and content themselves with giving general orders to aim low, and this perhaps accounts for the fact that most wounds are inflicted on the enemy's lower extremities, statistics showing that on the average 45 per cent. of wounds occur in the legs, 33 per cent. in the abdomen, 21 per cent. in the arms and chest, and only one per cent. in the head.

OLIVER WENDELL HOLMES AT HIS THIRTIETH YEAR.

ELISHA BARTLETT and Oliver Wendell Holmes were colleagues at the Hanover Medical School in 1839. Bartlett, writing to Dr. John Orne Green, of Lowell, September 8, 1839, gives the following description of the Autocrat: "Dr. Holmes you know something of. As a teacher there is no doubt of his success, although he will not show himself during this his first course. He has his anatomy — some of it at least — to study as he goes on, and he has not yet got the whole hang of the lecture room; he does not give himself his whole swing. His attainments in medical science are extensive and accurate, and his intellectual endowments are extraordinary. His mind is quick as lightning and sharp as a razor. His conversational powers are absolutely wonderful. His most striking mental peculiarities consist in a power of comprehensive and philosophical generalization on all subjects, and in a fecundity of illustration that is inexhaustible. His talk at table is all spontaneous, unpremediated, and he pours himself forth, words and thoughts, in a perfect torrent. His wit and humor are quite lost in the prodigal exuberance of his thoughts and language."

Correspondence.

REVIEWERS OF BOOKS ON MASSAGE.

BOSTON, November 14, 1899.

MR. EDITOR: — Reviewers of books on massage, with rare exceptions, show a most lamentable ignorance in what they attempt to say on this subject; for every small book or primer on massage is to them almost invariably a step in the right direction, even though the methods of doing massage described in each is totally different from those laid down in the others. The issue of the *Journal*, November 9th, contained the review of a book on "Massage and Swedish Movements" written by a Swede, in which the use of oil is advocated in doing massage. This is not massage at all, it is inunction, for the purpose of preventing

friction, obviating manipulation, spoiling a good grip, and hindering the hand from pressing firmly on the skin so as to make it move over the subjacent tissues. It requires no more skill to rub with grease than it does to put paint on a barn door, and those who use it continually for this purpose do so to prevent chafing of the skin and rubbing holes in the patient. It has its uses but more abuses. There is as much difference between this and genuine massage as there is between the work of the house-painter and that of the artist who can paint pictures and bring out expressions, lights and shades. Weir Mitchell in an article in the *New York Medical Record* of December 24, 1892, said: "Generally the Swedes rub badly and without method; are fond of mere *effleurage*, or slap and pound the distracted nervous woman into a condition of excitement. I have often been myself *masséed* in Europe, where such massage as rest cases need is ill understood. On the whole, it is far better done in this country. The American plan of muscle-kneading carefully and systematically done, with thought at the very finger-ends, is what we want."

The Swedes are everlastingly blowing about Sweden being the home of massage, and yet as recently as 1887, they had no books in their own language on this subject. The translation of my article in Wood's "Reference Hand-book," was probably the first book on massage in the Swedish language. This received a highly complimentary review in the *Boston Medical and Surgical Journal*, though the reviewer confessed that he could not read a word of it.

Dr. Symons Eccles' excellent book on the "Practice of Massage" was wilfully misrepresented in the *American Journal of the Medical Sciences* and I promptly called the attention of the editor to the proof of this fact. He kindly replied that he had sent my letter to the reviewer, who maintained an indiscreet silence. If it had been known that Dr. Eccles was not only a practical *masseur* but also president of a neurological society in London, his book would have received very different treatment. The chapter on Gynecological Massage in my "Treatise on Massage" was severely condemned in the *New York Medical Record*, and on the very next page of the same *Record* gynecological massage was highly commended as set forth in a "Primer on Massage."

Consistency is a jewel.

If you want a few more examples I can give them to you.

Very truly yours,

DOUGLAS GRAHAM, M.D.

AMERICAN MEMBERSHIP OF THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS, PARIS, AUGUST 2-9, 1900.

BALTIMORE, MD., November 17, 1899.

MR. EDITOR: — I fear that in speaking of the Thirteenth International Medical Congress in your issue of November 9th, p. 481, the impression may be obtained that physicians in the United States can only become members of that Congress by addressing the Treasurer-General in Paris. This impression is likely to diminish the number of American applicants for membership and I think it important to correct it. As you already know, an American National Committee has been formed, according to instructions from the Secretary-General, with full powers to receive applications and subscriptions, issue instructions, and, in general to act, so far as possible, for the French Executive Committee. I am sure you will aid the medical profession if you will insert in your news column the following notice:

Notice. — Thirteenth International Medical Congress, Paris, France, August 2-9, 1900. All doctors of medicine in the United States are eligible to membership. Application blanks and full instructions may be obtained by addressing Dr. Henry Barton Jacobs, Secretary, American National Committee, 3 West Franklin Street, Baltimore, Md.

Very truly yours.

H. BARTON JACOBS, M.D.

EXCLUSION OF FAT FROM THE DIETARY IS NOT A CAUSE OF BERI-BERI.

NEW YORK, November 15, 1899.

MR. EDITOR: — In an article on "Etiology of Beri-beri" quoted from the *Boston Medical and Surgical Journal* on page 263 of the November number of the *St. Louis Medical and Surgical Journal*, I read as follows: "There can be no doubt that suet dripping, fat pork, the fat of milk, and so forth, are most valuable articles of diet, *and their exclusion from the dietary a fruitful factor in the development of rickets*, tuberculosis and possibly of *leprosy* also." (Italics are mine.) How would the brilliant excogitator of that astounding theory explain the fact that in leprosy-and beri-beri-afflicted Japan, there is no such disease as rickets? Its absence from the pathology of Japan is the missing link in your author's chain of reasoning.

"The Non-Existence of Rachitis in Japan,"[1] is due to an abundance of fish-fat (whole blubber, etc.) and iodized sea-weed in the dietary of the people, and therefore the exclusion of fat could not be the cause of beri beri in Japan.

Very truly yours,

ALBERT S. ASHMEAD, M.D.

[Our correspondent is referred to this JOURNAL, September 14, 1899, page 274, to the *British Medical Journal*, and to Drs. Laurent and Brémaud.— ED.]

A MOTTO FOR MEDICAL STUDENTS.

BALTIMORE, MD., November 20, 1899.

MR. EDITOR: It is evident from the comment in your very kind editorial (November 16th) on my introductory lecture at McGill College, that my motto for a medical student, "Take no thought for the morrow," is liable to be misunderstood. Nothing could be farther from my meaning than to suggest the "unrestrained drifting" to which you refer. The sufficiency of the day's work, the total absorption in it, the stern resolve to put all the energies of one's nature into the task of the hour, doing with all one's might whatsoever the hand findeth to do — this surely is not an advocacy of drifting. As Carlyle somewhere puts it, our main duty is not to see what lies dimly at a distance, but to *do* what lies clearly at hand, an expression in other words of the motto which (backed by a far higher authority) I have found so helpful.

Very truly yours,

WM. OSLER, M.D.

[1] See my article published in the Medical Record, 1894.

METEOROLOGICAL RECORD

For the week ending November 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...5	30.01	46	55	38	74	66	70	S.W.	W.	14	10	C.	C.	
M...6	30.23	43	50	36	72	72	72	N.W.	N.	12	8	O.	C.	
T...7	30.36	46	57	34	78	60	69	W.	W.	10	8	C.	C.	
W...8	30.28	49	58	40	72	64	68	W.	S.W.	8	9	O.	C.	
T...9	29.95	52	60	44	82	65	74	S.W.	W.	8	12	C.	C.	
F...10	29.79	51	60	42	68	66	67	S.W.	N.W.	11	13	C.	O.	
S...11	29.89	43	50	36	63	98	80	N.	N.E.	5	9	O.	R.	.44

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 11, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1095	343	9.36	13.32	1.17	1.53	3.69
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	314	80	12.80	9.25	.64	2.56	8.32
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	194	57	8.84	13.00	1.04	3.12	2.60
Baltimore	506,389	153	36	11.05	10.40	2.60	1.95	5.85
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	100	31	15.00	21.00	4.00	7.00	4.00
Washington	277,000	117	38	18.70	7.65	2.45	5.95	8.50
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	56	17	16.02	16.02	1.78	3.56	—
Nashville	87,754	29	10	13.80	6.90	13.80	—	—
Charleston	65,165	31	11	9.69	3.23	—	9.69	—
Worcester	111,732	28	10	7.14	—	3.57	3.57	—
Fall River	103,142	26	11	15.40	—	11.55	—	3.85
Cambridge	92,520	34	14	2.94	20.58	—	—	—
Lowell	90,114	19	2	5.26	10.52	—	5.26	—
New Bedford	70,511	23	8	8.70	8.70	4.35	4.35	—
Lynn	68 218	17	2	5.88	—	—	—	—
Somerville	64,394	15	8	26.66	13.33	13.33	6.66	—
Lawrence	59,072	18	7	5.55	22.22	—	—	5.55
Springfield	58,286	12	1	16.66	8.33	—	8.33	8.33
Holyoke	44,510	8	1	12.50	12.50	—	—	12.50
Brockton	38,759	5	—	20.00	20.00	—	20.00	—
Salem	37,723	11	6	—	18.18	—	—	—
Malden	36,421	6	—	—	—	—	—	—
Chelsea	34,235	10	2	10.00	—	—	—	—
Haverhill	32,651	6	1	—	—	—	—	—
Gloucester	31,426	7	1	14 28	14.28	—	—	—
Fitchburg	30,523	6	3	16.66	—	—	—	—
Newton	30,461	6	2	16.66	—	—	—	16.66
Taunton	28,527	15	1	13.33	6.66	—	—	—
Everett	28,102	5	—	20.00	—	—	20.00	—
Quincy	24,578	7	2	14.28	28.56	14 28	—	—
Pittsfield	23,421	4	1	—	—	—	—	—
Waltham	22,791	9	2	11.11	22.22	—	11.11	—
North Adams	21,583	6	2	—	16.66	—	—	—
Chicopee	18,316	3	1	—	—	—	—	—
Medford	17,190	3	—	—	—	—	—	—
Newburyport	15,036	3	—	—	—	—	—	—
Melrose	14,721	2	—	—	—	—	—	—

Deaths reported 2,417; under five years of age 712; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 257, acute lung diseases 288, consumption 248, diphtheria and croup 102, typhoid fever 60, diarrheal diseases 41, cerebro-spinal meningitis 16, measles 12, scarlet fever 11, whooping-cough 10, erysipelas 4.

From cerebro-spinal meningitis New York 9, Boston 2, Washington, Providence, Lynn, Somerville and Gloucester 1 each. From measles New York 10, Providence and Cambridge 1 each. From scarlet fever New York 6, Philadelphia 4, Baltimore 1. From whooping-cough New York 5, Providence 3, Boston 2. From erysipelas New York 3, Washington 1. From small-pox Chelsea 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending November 4th, the death-rate was 18.8. Deaths reported 4,120: acute diseases of the respiratory organs (London) 418, diphtheria 97, fever 94, measles 77, diarrhea 74, whooping-cough 41, scarlet fever 40, small-pox (Hull) 6.

The death-rates ranged from 11.3 in Derby to 25.7 in Bolton: Birmingham 19.5, Bradford 17.4, Cardiff 13.5, Gateshead 21.5, Hull 18.7, Leeds 17.8, Liverpool 21.6, London 18.6, Manchester 21.6, Newcastle-on-Tyne 19.8, Nottingham 17.6, Portsmouth 15.6, Salford 22.9, Swansea 15.6, West Ham 16.3.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 18, 1899.

C. J. CLEBORNE, medical director, placed on the retired list of officers of the navy from November 10, 1899, under Section 1453, Revised Statutes, for incapacity incurred in the line of service; with the rank and three-fourths the sea pay of the next higher grade under Section 11, Navy Personnel Law.

L. L. YOUNG, passed assistant surgeon, placed on the retired list of officers of the navy from November 10, 1899, under Section 1453, Revised Statutes, for incapacity incurred in the line of service.

H. E. ODELL, assistant surgeon, apppointed from November 8, 1899.

J. S. TAYLOR, assistant surgeon, appointed from November 10, 1899.

R. G. BRODRICK, passed assistant surgeon, placed on the retired list of officers of the navy from November 11, 1899, under Section 1453, Revised Statutes, for incapacity incurred in the line of service.

J. C. ROSENBLEUTH, passed assistant surgeon, sick leave extended two months.

G. B. WILSON, passed assistant surgeon, detached from the "Constellation" and ordered to the "Dixie."

R. P. CRANDALL, passed assistant surgeon, ordered to the "Constellation."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING NOVEMBER 16, 1899.

IRWIN, FAIRFAX, surgeon. Department letter of June 16, 1899, granting Surgeon Irwin leave of absence for three months, amended so that said leave shall be for two months only. November 16, 1899.

CARTER, H. R., surgeon. To proceed to Port Tampa City, Fla., for special temporary duty. November 10, 1899.

MAGRUDER, G. M., surgeon. To rejoin station at Memphis, Tenn. November 15, 1899.

BLUE, RUPERT, passed assistant surgeon. Department letter of September 28, 1899, granting Passed Assistant Surgeon Blue leave of absence for one month and eight days, amended so that said leave shall be for twenty-seven days only. November 11, 1899.

CLARK, TALIAFERRO, assistant surgeon. Granted leave of absence for fifteen days. November 13, 1899.

SOCIETY NOTICE.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. — The twelfth annual meeting will be held at the St. Charles Hotel, New Orleans, La., on December 5, 6 and 7, 1899.

Members of the medical profession are cordially invited to attend.

JOSEPH TABER JOHNSON, M.D., *President.*
W. E. B. DAVIS, M.D., Birmingham, Ala., *Secretary.*

RECENT DEATH.

JOHN A. MCCREERY, M.D., of New York, died on November 11th, at the age of fifty-two. He was graduated from Bellevue Hospital Medical College in 1871. He was one of the attending physicians of St. Vincent's Hospital.

BOOKS AND PAMPHLETS RECEIVED.

The Hygiene of Transmissible Diseases: Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Illustrated. Philadelphia: W. B. Saunders. 1899.

Handy Book of Medical Progress: A Lexicon of the Recent Advances in Medical Science. By Charles Warrenne Allen, M.D., Consulting Dermatologist to the Randall's Island Hospital, etc., and Jacob Sobel, A.B., M.D., Dermatological Assistant at the Good Samaritan Dispensary, etc. New York: Wm. Wood & Co. 1899.

The Urine and Clinical Chemistry of the Gastric Contents, the Common Poisons and Milk. By J. W. Holland, M.D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Forty-one illustrations. Sixth edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

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Original Articles.

THREE CASES OF PYLOROPLASTY FOR STRICTURE OF THE PYLORUS.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON,
Visiting Surgeon to the Massachusetts General Hospital; Assistant Professor of Clinical Surgery, Harvard University.

Obstruction at the pylorus seems not uncommon if we consider as causes of obstruction not only organic changes at the pylorus itself, but also changes in the position of the stomach by which a kink or flexure is produced at its outlet. It seems probable that many cases of gastric dilatation are caused by sharp bends at or near the pylorus, either in the stomach or in the duodenum. These bends, though not preventing the passage of food, do produce a certain amount of obstruction, with stasis and fermentation of gastric contents and a resulting dilatation. Such kinks and flexures may not even depend upon adhesions; they may take place without any changes whatever at or about the pylorus, the faulty position resulting from a simple overloading and sagging of the normal stomach, or from atony of the gastric walls, and dilatation. That such a cause should be effective may seem more or less a matter of theory; but the proof lies in the great efficacy of lavage. This is shown in the following case:

Edward S. C., of Denver. Seen at Union-Springs, New York, on June 1, 1892. This was a man of thirty-five, with a good family history, who had been dyspeptic since the age of fourteen. He had suffered from acidity of the stomach, with vomiting and eructations of gas. For five years he had had attacks of pain in the region of the gall-bladder, gradually increasing in frequency, and supposed to be caused by gall-stones. He had never passed any gall-stones, however. The pain had always been in the gall-bladder region. He had been jaundiced at times. He had lost 16 pounds in weight. The pain would be at first intermittent, and then steady. The attacks were sometimes short, and sometimes long. The pain at the time of my examination was confined to the border of the ribs on the right side, running up as high as the fourth rib. The bowels were regular, except when he had to take morphine for pain. The stools for the past three or four weeks had been dark and tarry. There was intense suffering from gas in the stomach and bowels — so great that he feared rupture of the intestines. The vomitus had been like coffee grounds.

The patient was pale, very much emaciated, with a pulse of 124 and a temperature of 99.4°. The abdomen was tympanitic, except in the left lower quadrant, where there was a non-resistant, fluctuating tumor. There was neither pain nor tenderness in this tumor. I aspirated and got what seemed to be gastric contents. The pain was seated in the right anterior thoracic wall, three or four inches above the margin of the ribs, directly above the gall-bladder. From this point the pain radiated chiefly toward the pylorus and the tumor. It seemed clear that there was a dilated stomach, and that the pain was caused by its dragging weight; that a sharp bend was produced at or near the pylorus, which aggravated the original cause, whatever it might be, and increased the obstruction. I advised systematic lavage, which was carried out. On June 22, 1893, I examined this patient, and found him to be very well. There was no evidence whatever of dilatation. There was no pain. He was in perfect health, and was able to attend to his business. He reported himself perfectly well on September 2, 1894. There were no physical signs of dilatation.

This case illustrates well a gastric dilatation dependent upon a sharp bend at or near the pylorus. The cause of the original dilatation is conjectural. It may have been a moderate enlargement from the ordinary causes, the bend having been produced only after prolonged distention. That the constant sagging of a distended stomach was later on the chief factor was shown by the efficacy of lavage.

A case resembling this in some respects came under my observation in my present service at the Massachusetts General Hospital. A young girl under treatment for some slight trouble — neurasthenia with dyspepsia — without apparent cause suddenly became collapsed. She was in the West Medical Service under the care of Dr. Fitz, and was referred to the West Surgical Service. I found her in profound collapse. The lower abdomen was filled by a smooth, spherical tumor. It was dull, fluctuating and tender. There was sharp abdominal pain, with normal temperature and a high pulse. Her condition was alarming. Though no tumor had been detected previously on physical examination, it seemed to me possible that the tumor was an ovarian cyst with twisted pedicle, as I had myself once failed to find such a tumor before twisting occurred. The tumor proved to be an acute dilatation of the stomach. Dr. Mixter kindly operated for me and found an excessive and phenomenal dilatation. It was found impossible to pass a stomach tube and to wash out the stomach. An anastomosis was therefore made between the stomach and intestine, but this proved ineffectual. Whether the dilatation was caused by a sharp bend at the pylorus or not could not be determined.

Whatever the initial cause which produces the bend near the pylorus, it seems evident, even if that cause be a constriction, that the traction of the loaded stomach will tend to increase the obstruction. In many cases the only cause of dilatation may be an organic stenosis at the pylorus. In some instances this stenosis does not result in dilatation, but rather in a thickening of the gastric walls. In two of the cases reported herewith there was no dilatation whatever, though before operation that condition had been supposed to be present. In one the cause was too recent; in the other the gastric walls were evidently hypertrophied.

The influence of adhesions from external causes in producing stenosis seems clear. Such a cause may be found in an old cholecystitis, in which, after the acute infectious stage, with dilatation and adhesion-formation, has subsided, the gall-bladder contracts and drags upon the duodenum or upon the pylorus.

Localized peritonitis from other causes, with adhesions about the stomach, may produce serious disturbance of nutrition, even though there may be no organic disease of either pylorus or duodenum. In such cases nutrition is interfered with either from limitation of the normal physiological movements of the stomach, or, what is more likely, from a real obstruction to the flow of the gastric contents. This point has been recently illustrated in Dr. Porter's clinic at the Massa-

[1] Read at a meeting of the Surgical Section of the Suffolk District Medical Society, April 5, 1899.

chusetts General Hospital by the following brilliant case:

The patient, a man of twenty-nine, farmer and painter, had had for three years symptoms referable to the right hypochondrium. There were pain, ten-



FIG. 1. Showing in vertical section a stricture of pylorus.

derness, and vomiting. At one time there was wrist-drop and facial twitching. The last attack occurred five weeks before entrance to the hospital, in November, 1898, and from this attack he had not recovered. During this time his weight fell from 165 to 125, and he was very weak. The stomach could be distended until its lower border reached one-third of the distance between umbilicus and pubes. At times he vomited as much as a gallon of fluid. There were obscure physical signs in the right hypochondrium. The vomitus contained free hydrochloric and lactic acids.

Dr. Porter operated December 30, 1898, and found the pylorus adherent to the gall-bladder and under surface of the liver. There were very fine adhesions along the attachments of the lesser omentum. These were divided and tied off in sections. The pylorus having been thus freed from the gall-bladder, the pyloric end of the stomach became freely movable. The pylorus itself was opened and carefully examined, but no lesion or constriction was found.

The patient made a rapid recovery. All his symptoms were relieved. He was discharged January 30, 1899. On March 23d he re-entered for examination. He was so improved that he was not recognized. He had gained 45 pounds. There was no distress after eating; he was in perfect health.

In this case the symptoms were undoubtedly due to the malign influence of adhesions upon the position and shape of the stomach, and consequently upon its physiological functions.

In other cases separation of adhesions about the pylorus has been followed by benefit, though I do not know of any case in which the benefit of operation has been so conspicuous.

The diagnosis of pyloric obstruction may be easy or it may be hard. The lesion may be unmistakable, or may be determined only after exploration. The facility with which it is recognized depends first upon the detection of an adequate possible cause. In Case I the boy's history gave no sign, his age no tendency, his physical examination no clue; yet the history and complaints, even without adequate probable cause, pointed directly to a pyloric stoppage, and to nothing else. In Case II the regurgitation of stomachfuls of food some hours after the eating, with constipation and progressive emaciation, would have proved a pyloric stenosis even had there been no history of a corrosive poison accidentally swallowed. In Case III, on the other hand, no symptoms pointed directly to a benign stenosis, and none to a complete one. The history pointed quite as strongly to a carcinoma as to a cicatrized ulcer; to a simple dilatation as to a constricting band. There was no history of ulcer.

The importance of a history of gastric ulcer may be, and often is, overestimated. The typical symptoms of such a lesion are often absent. There may be nothing whatever in the man's life to suggest an organic disease of any kind. Indeed, in a case of actual perforation recently operated upon the symptoms appeared suddenly in a robust young man in perfect health. In this lesion as in so many other acute abdominal emergencies, the patient may present anything but the classical history and appearances of organic disease. Were the signs of ulcer always so glaringly apparent as they are described to be, or as, in the majority of cases, they are, no one could mistake the lesion. Such cases are only too easy to diagnosticate. It is in the unusual, the atypical, that the unexpected is found; therefore in all cases of suspected pyloric stenosis the absence of these typical symptoms must not excite too great a confidence. Just as in gall-bladder lesions, and especially in acute inflammations dependent upon gall-stones, there is often no previous history whatever of gall-stones themselves upon which to base a guess, so in gastric lesions there may have been a lifetime of perfect digestion. I have seen, for example, a complete intestinal obstruction from a simple cholesterin stone in a man of sixty-five or seventy in whom there had never been a moment of conscious pain; yet in this case the stone was unmistakably a gall-stone, and it must have ulcerated through the gall-bladder and into the intestine. So in gastric cases the existence of a cicatrix closing the lumen of the pylorus cannot be disproved even by the most rigid elimination of a previous history of ulcer. Yet it may be stated that as a rule an ulcer in the pyloric region will be found to have given at some time or another signs of its presence. A history, even if obscure, may furnish the missing link in the chain of evidence. Fortified by such a history, the symptoms of pyloric obstruction acquire a meaning clear enough to indicate the ap-

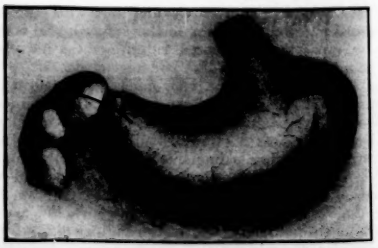


FIG. 2. The incision through the cicatrix, with sound tissues on either side.

proximate surgical remedy and to demand an exploration.

The most important symptom of pyloric obstruction is vomiting or regurgitation of food some hours after it is taken. The more complete the obstruction the

more the food will be regurgitated, until practically all that is swallowed will be returned. If the food is retained long enough, it will become decomposed and offensive. Pain may or may not be present. The stomach may be dilated or even contracted. Its walls



Fig. 3. The transverse suture nearly completed. The cut shows where the last sutures are to be applied, and where the greatest tension will be.

may be hypertrophied. At exploration the peritoneal surfaces are reddened and its vessels injected. If dilated the stomach will present the usual characteristics of dilatation. One may think before operation that he detects a tumor; but I am skeptical about it, even when exploration shows a considerable thickening about the pylorus. In Case III and in two cases without stenosis which were explored there was an unmistakable thickening of the posterior gastric wall near the pylorus. In Case III the tumor had been felt by one of the consultants; yet I could not feel this thickening by direct pressure, even when my hand was in the abdomen. It was only by getting the mass between my thumb and fingers that I could even then be sure of it. It seems hardly necessary to assert that gastric tumors cannot be felt unless they are at the pylorus or in the anterior wall, except when they are very large and project forward. An excessively large tumor of the stomach escaped the notice of every examiner in a recent instance, and yet autopsy showed that it was present. The apparent thickening so often detected deep in the epigastrium overlying the abdominal aorta generally is either the pancreas or the normal pylorus, as I have time and again demonstrated. The anatomical structure of the epigastrium makes deep palpation deceptive and unsatisfactory, nothing being felt when a tumor actually exists, and tumors being felt when everything is normal. Exploration through an incision is the only way in obscure cases to be sure of the lesion.

With characteristic vomiting, with or without pain or dilatation, progressive emaciation adds the required evidence for a reasonable diagnosis of pyloric stricture. If the vomitus contains blood, changed or unchanged, the question of an acute process, whether ulcer or cancer, must be considered. The opinion inclines toward carcinoma if the blood is changed, if there is cachexia, if the patient is over thirty-five. It becomes a conviction if there is a tumor. If the patient is under thirty-five, if he is anemic rather than cachectic, if the blood is bright, the opinion must incline towards an ulceration.

The stomach presents a field in which surgery may achieve some of its most brilliant results. From the anatomical, the physiological and the pathological standpoints this field is a most attractive and encouraging one. The size of the stomach, the thickness of its walls, its easily controlled blood supply, its physiological functions, which may be more or less completely dispensed with — these characteristics make the stomach favorable for all the technical possibilities of modern methods.

In strictures of the pylorus of benign origin no methods seem worthy of serious consideration which do not restore to its normal calibre the lumen at the point of constriction. Though in rare instances ideal restoration may be impossible, yet in practically all cases it can be accomplished. We may resort to plastic operations, or to resections with suture in continuity; we may make a communication between the stomach and the jejunum. In benign strictures, however, the lumen may be usually restored in continuity. We need not consider, therefore, the makeshifts by which the stream is diverted directly into the jejunum.

I have used the Heinecke-Mikulicz pyloroplasty in the three cases herewith reported (Figs. 1, 2 and 3). This procedure, whatever its theoretical beauties, has certain disadvantages which these cases have emphasized. On the cadaver no operation could be more perfect than that which enlarges a flexible cylinder by transforming a longitudinal into a transverse slit. Presumably this operation would be perfect upon a healthy pylorus. I have demonstrated its efficacy upon an obliquely inserted ureter[1] in hydronephrosis. No operation could be more satisfactory than this was in Case I. When, however, there is a wide annular ring of cicatrix at the pylorus the method is faulty and unsatisfactory, for reasons to be given presently. Upon the cadaver a longitudinal cut two inches long, transformed by suture into a transverse one, enlarges the lumen markedly. The posterior and lateral wall of the new lumen are made of the old pylorus, the extremities of the sutured wound representing the former anterior surface now separated by the length of the transformed incision (Figs. 2–4). The anterior wall of the restored pylorus is made up of gastric and duodenal walls brought together from the distance of one inch each way — the gastric wall one inch above the centre of the cut being in apposition with that of the duodenum one inch below the centre of that cut. From these sutured points the



Fig. 4. Shows the depressed area about line of suture, when the cicatrization is thick and extensive.

gastric and duodenal walls are gradually merged into the posterior and lateral surfaces that were taken from the anterior pyloric wall. This approximation of surfaces is satisfactory when the cicatricial ring is narrow,

[1] Transactions of the American Surgical Association for 1897.

or when the cicatrix is confined to the posterior wall of the pylorus; for the new channel is then bounded everywhere, except behind, by normal mucous membrane. Even when the posterior half of the circumference of the new lumen is the old cicatrix, there is room enough. When, however, the cicatricial ring is broad, the new walls in front do not have enough mucous membrane, and the stricture may recur. In Case II, in which the stricture was comparatively long, this complication was supposed to have resulted. The lumen was a flattened slit, its posterior surface being the cicatrix, its anterior, mucous membrane from stomach and duodenum, and I was not sure that the relief was enough (Figs. 4 and 5).

In Case III this possible difficulty was anticipated. After making the longitudinal cut, I trimmed the edges into a lozenge — an expedient by which all the cicatricial tissue was removed except that comprising the posterior wall of the pylorus. The whole anterior and lateral portions of the circumference were thus normal gastric wall, and the joint was three-fourths

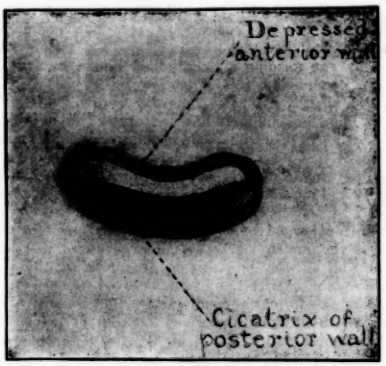


FIG. 5. A cross section of restored pylorus, showing depressed anterior wall.

mucous membrane on its internal surface. In such cases the Heinecke-Mikulicz operation is not as satisfactory as a resection of the anterior and lateral pyloric walls, because it is less efficacious and no safer. Moreover, resection of the lateral walls, leaving the posterior wall with its blood supply intact, is quite as rapid and much more secure, and makes a larger lumen. Another difficulty with the Heinecke-Mikulicz method lies in the stiffness of the cicatrix, which does not always permit a ready approximation. In Case II the tension was too great on the central sutures, for the stiff and thick pyloric wall would not adapt itself readily to the change in direction (Fig. 3). Moreover, the longitudinal tension was so great that when completed the line of incision was depressed in the centre (Figs. 4 and 5) without being rounded out or even bulging with the excess of transplanted tissue, as is desirable in plastics of this kind.

The technique of the Heinecke-Mikulicz operation needs no amplification here. The longitudinal cut must not be very long — two or two and a half inches is enough (Fig. 2). If suturing is unsatisfactory, or if, on bringing the ends together temporarily with forceps, the new pylorus is unsatisfactory, a cut should be made from the ends of the longitudinal cut to the lateral borders of the pylorus above and below (Fig. 6 and 7). These additional cuts should be so made that the opposing surfaces of stomach and duodenum will fall together in full and easy approximation, even if it becomes necessary to remove entirely the cicatrix of the posterior wall. The last procedure would, of course, be a complete resection of the cicatrized pylorus.

For suture material I use only silk. The mucous membrane should be united separately by suture, continuous or interrupted, to control bleeding and to secure accuracy. One row of Lembert sutures is enough for the peritoneum, though there is no objection to a second fortifying row. A strand of gauze should be left for forty-eight hours in contact with the line of suture.

The results in this, as in most operations upon the stomach, are very encouraging; all my cases of gastric surgery have recovered except two, one a digital dilatation for a benign stricture — a most unsatisfactory and useless operation — and a gastro-enterostomy. The latter was performed with a Murphy button, and was followed by general peritonitis from extravasation. The list of successful operations includes two gastrostomies for foreign bodies, a pylorectomy, and a total extirpation — not to mention several gastrotomies. I have no doubt that many chronic and distressing gastric cases could be permanently relieved by an exploration, and the immediate application of the appropriate surgical remedy. In most instances, however, the favorable moment is lost by waiting for positive diagnostic signs. The operation often is not resorted to until the patient is so reduced that he cannot successfully undergo even the rapid manipulations of a pyloroplasty.

CASE I. Frank C., aged seven and one-half, a patient of Dr. Nason, of Newburyport, I saw on April 28, 1896. He had always been well. Twelve weeks before, he was taken with violent epigastric pain and vomiting. The vomitus contained a little blood. The pain lasted two or three days, but the vomiting continued. The bowels moved regularly for three or four weeks, then became obstinately constipated. He was extremely emaciated. The stomach was dilated. Fluids by mouth would accumulate in the stomach, and finally would be vomited. The diagnosis of pyloric stricture and gastric dilatation was made. The Heinecke-Mikulicz pyloroplasty was immediately performed (Figs. 1, 2 and 3). He made a good recovery, and is now shown in perfect health.

CASE II. Charles D. G., aged forty-eight, married, shoemaker, a patient of Dr. Marshall, of Lynn, entered the Massachusetts General Hospital in February, 1899. The family history was negative. The patient was a man of good habits, and had always been well. On December 11, 1898, he took by mistake about a third of a tumbler of muriatic acid, by which an immediate burning pain in the stomach was caused. This grew worse for three days, and then gradually subsided. On the eighteenth day there was bloody vomitus — a pint in amount. There has been no blood since. Food remains in the stomach from three to thirty-six hours. He is always hungry. The vomitus is at times foul. Food causes some distress in the stomach a short time after ingestion. He has been on nutritive enemata for past two weeks.

The patient was a fairly-developed and poorly-nourished man — evidently starving. The pulse was weak and the face thin and drawn. He asked for food and drink; but, when this was given, regurgitation of everything occurred. He was placed on nutritive enemata every six hours. It was evident that there was an obstruction at the pylorus,

caused by a corrosive poison, with ulceration and subsequent cicatrization and stricture.

On February 11, 1899, a median incision was made, three inches long, beginning about one inch below the ensiform cartilage. The anterior wall of the stomach and pylorus presented, between which could be seen the depression of an annular stricture. A longitudinal incision three inches long was made directly through the stricture and the contiguous surfaces of stomach and duodenum. The pylorus was found quite impervious. It was very difficult to bring the ends of the longitudinal cut into immediate transverse approximation. Owing to the rigidity of the cicatricial tissue, the tension was so great upon the stitch which brought the ends of the longitudinal cut to the centre of the transverse line that it immediately tore out. It was necessary, therefore, to begin at the sides, half-way between the ends of the incision. The change of direction from longitudinal to transverse was thus gradually attained without too great tension upon any one suture (Fig. 3). The sutures were the interrupted Lembert of fine silk. Two small wicks were placed down to the line of suture, and the rest of the abdominal wound was closed with silkworm gut.

The patient bore the operation well. The pulse was 120 and of good quality. He was given a morphine suppository of one-fourth grain. This was repeated during the evening. Every four hours the patient was given an enema of beef juice, brandy, salt solution, each one and one-half ounces, an egg, strychnia, grain one-thirtieth, deodorized tincture of opium ten minims.

On February 12th the patient was fairly comfortable. He slept four or five hours during the night. Twenty-four hours after operation drachm doses of peptogenic milk were given every hour, and well retained. The amount was increased in the evening to two drachms every hour, with sips of warm water every hour. The enemata were well retained. On February 19th the stitches and wicks were removed. On February 21st he was taking liquids and soft solids without nausea. The patient's face was filling out rapidly, and his general appearance was much improved. On February 22d he vomited. All food was therefore omitted for twenty-four hours, when he was given liquids and soft solids. On February 24th he was put upon house diet. He was improving daily in appearance. On February 28th the patient was apparently doing well. He said that he had no nausea, and kept down all he ate; the nurse, however, saw him vomiting, and, on questioning, found that for the last three days he had been vomiting at night all that he had eaten during the day. He carefully hid the vomitus in the bedpan and the urine cup, till he could empty it unnoticed. The reason given for this deception was that he would be deprived of food if he confessed the vomiting. On March 4th the patient's general appearance was improving, and he was gaining in weight. In the last two days he has gained four pounds. On March 6th he was discharged relieved. He reported once or twice afterwards. Dr. Marshall reports that he has returned to his work and is perfectly well.

In this case the occurrence of vomiting suggested the reclosure of the pylorus. I was prepared, therefore, to perform a more extensive plastic — to remove if necessary, the cicatrix by a more or less complete resection (Figs. 6 and 7). It is possible that such a procedure may in the future become necessary. For reasons already given, linear pyloroplasty does not seem likely to be so efficacious as a V-shaped excision of the cicatrix, or even a complete cylindrical resection. Guided by the experience in this case, a modification of linear pyloroplasty was used in Case III (Fig. 6).

CASE. III. George L., aged fifty-four, married, shipcarpenter, of Charlestown, a patient of Dr. Morris, entered the Massachusetts General Hospital in March, 1899. The family history was negative. He had always been well, and of good habits.

This patient had been unable to work since June, 1898, on account of pain in pit of stomach. In November, 1898, he vomited tarry-looking material, but there had been no

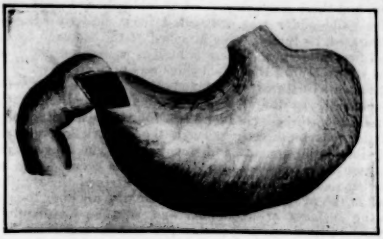


FIG. 6. Partial resection of cicatrized pylorus; a method preferable to the linear incision when cicatrization is extensive.

vomiting since. For the last four weeks he has passed tarry-looking feces. At times he is constipated, and at times he has diarrhea. The pain is not constant. There is some tenderness in the region of the epigastrium all the time. He has had to give up everything except soft food. For a time he lost weight; then regained it. At times he vomits nearly everything at varying periods after eating. At other times he vomits not what he eats, but a thin, green liquid, though it may be soon after eating. He has himself felt a tumor in the epigastrium. The bowels have been constipated of late; the appetite has been poor. He is a well-developed but poorly-nourished man. The body is not much emaciated, but the face looks drawn, thin and pale. Abdominal examination is negative, except for an indefinite mass, about the size of an English walnut, which can be felt on deep palpation in the right epigastrium.

March 8th. He has had a poor night; he vomited this morning. The vomitus on examination shows presence of free hydrochloric and lactic acid. March 9th. About middle of last night, the patient again vomited what seemed to be chiefly blood.

March 11th. Examination by Dr. Fitz shows the stomach to be dilated, its lower border being about two inches below the umbilicus. There is a leucocytosis of 15,000. Hemin crystals are found in vomitus. Undigested food resembling rice is found in stomach washings. The red blood count is 5,712,000; hemoglobin, 62 per cent.; whites, 7.45 A. M., 13,000; 11.15 A. M., 12,600; 4.30 P. M., 12,250. Butyric acid is present. The urine is high colored, acid; 1.030; no albumin; chlorine normal; no sugar; bile, slight trace. March 15th. Patient has



FIG. 7. A still more extensive resection; a method to be used in exceptional cases.

been fairly comfortable during past few days. Stomach washed out to-night and found to contain considerable undigested food of a very sour odor.

On March 18th an incision four inches long was made in the median line, beginning just below the ensiform cartilage. No evidence of malignancy was found, but the pyloric end of stomach was adherent to liver and gall-bladder, and there was evidence of an old adhesive peritonitis. The gall-bladder was contracted from side to side, but elongated, its fundus being attached to the stomach by old and firm adhesions. These adhesions were dissected from the stomach until the gall-bladder was perfectly free. The pylorus was extensively thickened and tightly constricted — probably by the cicatrization of an old gastric ulcer. An incision three inches long was then made longitudinally in the pylorus, directly through the constriction, extending into both stomach and duodenum. The longitudinal incision was converted into a lozenge or a broad V by removing a considerable portion of the cicatrix of the anterior wall of the pylorus (Fig. 6). By bringing together the opposing surfaces of duodenum and stomach an abundant artificial lumen was procured. The mucous membrane was first united by a continuous suture; the peritoneum by an interrupted Lembert of silk. Two gauze wicks were then placed on either side of the line of sutures, and the abdominal wound was closed with interrupted silkworm-gut sutures. The patient recovered from ether well. He vomited once, about an hour after coming out of ether. The vomitus consisted mostly of blood. The patient was very comfortable during the night, after a suppository of one-fourth grain of morphine.

March 19th. The patient was in good condition; there was no distention or abdominal tenderness. The following enema was given every few hours: Brandy, salt solution, beef juice each one ounce; eggs; tr. op. deod. m. x. There was good movement of bowels this morning. On March 20th the patient passed a comfortable night. This morning one pint salt solution by rectum was well retained. At noon to-day, forty-eight hours after operation, peptogenic milk, one drachm every hour, by mouth, was well borne. There was no vomiting or gastric distress. This evening peptogenic milk was increased to three drachms every two hours, with sips of water at frequent intervals. On March 21st the liquids were increased to peptogenic milk every two hours, with port wine one drachm, every four hours. The wound was redressed. One wick was taken out, the other loosened. On March 22d the liquids were increased to peptogenic milk, one ounce every four hours. The patient complains of no gastric distress. On March 23d the second wick was taken out. The wound was healed by first intention, except for a small granulating area where the wick was. Peptogenic milk, four ounces, was given every four hours; beef tea, two ounces every four hours, eggnog with sherry, half an ounce. On March 26th all the stitches were out. Peptogenic milk and beef tea were omitted. The regular liquid diet — soups, milk, etc. — was given, eight ounces every four hours.

The patient was discharged relieved. He reported several times after discharge. At one time it seemed probable that there was a recurrence of the pyloric disturbance. The last heard from him, through Dr. Morris, was that he was doing very well.

THE HOSPITAL FOR CHRONIC DISEASE.[1]

BY E. W. TAYLOR, M.D., BOSTON,
Visiting Neurologist, Long Island Hospital, Boston Harbor.

WITH the striking increase in hospital development which has marked the last few years, the victim of chronic disease has received but a small share of attention. Popular sentiment has demanded that the acutely sick be given the first care, a feeling with which no one would wish to take issue. The limitations of our hospitals have required that space be given to those whose needs are immediate, and whose ailments are capable of palliation or cure; residence in the wards is discouraged beyond a certain period, both on account of the necessity of making room for others, and for reasons of expense. This is as it should be. We have not yet attained to a great hospital in the sense of an all-inclusive one, where cases of long as of short duration may alike be treated. The necessity of discrimination is apparent, and may, no doubt, most conveniently be made between the so-called acute and chronic diseases. The inevitable result is that the victim of a chronic disease suffers, and often suffers severely, for want of the skilled treatment which it would seem an enlightened community should provide. His needs, it may be, are not immediate, his treatment may not demand heroic measures, but he requires above all that constant care which a properly equipped institution can alone give. Without that care it is hard to conceive a more wretched illness and death than is likely to fall to his lot amid the increasing squalor of a home rendered destitute by the length of his illness. There is certainly no class of persons more demanding of sympathy from a purely humanitarian standpoint. Within the last few years a decided advance has been made in the establishment of hospitals for certain classes of disease, ordinarily not accepted at general hospitals. I refer particularly to institutions for the treatment and care of tuberculosis; even in these, however, the preference is, and at present must be, given to those in whom treatment is likely to be efficacious. The fatally ill are therefore seldom gainers, and their disease must still run its course, a constant menace to their associates. With but few exceptions, and those absolutely inadequate to the needs, the sufferer from chronic disease remains an outcast, for whom the community provides no shelter, except under the declaration of absolute dependence.

The time will no doubt come in our country, as it has in others, when the sentiment of the medical profession, as of the people at large, will demand and find the means of providing institutions for the sick so comprehensive in scope that no worthy person who is diseased and disabled from whatever cause will be rejected. We are, however, far removed as yet from that consummation. We must recognize the conditions as they are, and make the most of present opportunities. That we have not even done that is sufficiently obvious. As at present organized, the hospitals in which chronic disease is treated are, with the exception of the hospitals for the insane and various smaller institutions, connected with almshouses. This is true of Massachusetts and Boston, and also, so far as I am aware, of other American cities. The development of these almshouse hospitals has lagged behind that of others for various reasons. Prejudice, politics, lack of scientific interest, a superficial feeling of the hopelessness of treatment have all entered in. Yet it is in these institutions that the first step must undoubtedly be made toward a broader spirit of scientific inquiry and toward a more liberal conception of the privileges and duties of medical charity.

Before entering upon what seem to me the very hopeful possibilities of the present situation in Boston toward the development of its almshouse hospital into a highly creditable institution it will be well to consider briefly the value of the hospital for chronic disease in general. This would appear hardly necessary

[1] Read at a meeting of the Suffolk District Medical Society, October 28, 1899.

had we not in this community been so slow in recognizing and taking advantage of our opportunities.

In the first place, the hospital for chronic disease is in no respect different from the hospital for acute disease in that it should subserve two chief purposes: first, the care of the sick in the best possible way, and secondly, as a centre for medical investigation and medical teaching. Experience has amply shown that the union of these two purposes conduces to the greatest possible efficiency and the maximum of usefulness. The patients are, as a class, benefited by the greater degree of attention bestowed upon them, and the physicians in charge and students are stimulated to better work through the possibility afforded them of investigation and study, and hence indirectly the community at large is the gainer. These arguments apply with peculiar force to the hospital for chronic disease. As already indicated, ordinary motives of humanity demand that we should provide proper hospital care for those sick with disabling or lingering disease. They need it badly. This aspect of the question is so self-evident that it certainly requires no extended exposition.

When, however, we turn to the general attitude of physicians toward this problem of chronic disease and its treatment, we are apt to meet with a discouraging apathy. We are told that one can do nothing for such cases, that they are not interesting from a medical standpoint, that little is to be learned from them, and that their care is a simple matter of nursing. This attitude, which is undoubtedly prevalent, is most sincerely to be deprecated. It implies a certain small and narrow view of the aims and problems of medicine, which should be combated at every turn. Evidently much may be done for the chronic sick in many cases, and something, no doubt, in all. The benefit to persons suffering from tuberculosis in its various forms is a case in point. We have had ample demonstration in Massachusetts of the effects of hospital treatment for lung tuberculosis; continued hospital care for persons with tuberculosis of bone, with the resultant deformities, is absolutely essential in many instances to the permanency of relief. That benefit may result from the hospital care of any of the chronic degenerative processes of internal organs, we are certainly in no position to deny; that symptoms may be palliated, when the underlying condition is beyond control, is self-evident. These in themselves are sufficient reasons for the establishment and maintenance of a hospital for chronic disease. As for such cases being uninteresting and uninstructive — that depends wholly upon the attitude of the physician toward his professional work. If he be merely superficial and seeking only for immediate results, his interest will naturally flag; if he looks below the surface, he will find many of the problems of medicine offered him in most attractive form, which can hardly fail to claim his deepest interest. He has the completest control of his patients; he may watch for many years the development of morbid conditions and study the signs and symptoms and ultimately the post-mortem appearances connected with them with a completeness which otherwise would be quite impossible. That such work is valuable and indispensable in a progressive medical community seems evident. The material always may be found in a hospital for chronic disease; it is rather the enthusiasm for investigation that is lacking. It seems to me, therefore, that the physician, certainly in many lines, should find in such hospitals a congenial field for positive and highly profitable scientific work.

The next proposition should meet with still less opposition, and that is, that a hospital for chronic disease is an invaluable adjunct to medical teaching. It goes without saying that very many conditions may be seen and studied to best advantage in hospitals devoted to the care of the acutely sick. Such, for example, are surgical disorders, fevers and the acute exanthemata. Training in the recognition and treatment of these conditions the student must certainly have, but we deprive him of a great deal when we fail to give him the opportunity of studying the course of disease as it manifests itself at varying intervals. The degenerative affections, which form so large a proportion of the diseases of adult life, cannot be properly studied by an investigation at any given moment; they demand a painstaking study extending throughout the course of the disease, in the same sense that a knowledge of typhoid fever demands study from its earliest prodromal symptoms to its terminal stages. A complaint, and to my mind a very just one, made by the medical student is that he fails to gain a definite idea of the progress of disease and of the effects of treatment during the short time a patient is at his disposal for purposes of study. This is, of course, peculiarly true of chronic disease. A student must in great measure learn for himself in after life what should have been a fundamental part of his earliest instruction. The hospital for chronic disease offers just the needed opportunity. Patients are there under complete control; the vagaries of their several diseases may be studied from month to month and year to year; the details of symptoms as they arise may be followed and tabulated; the influence of drugs may be investigated, and a knowledge of the natural history of disease made a part of the student's medical equipment. It is hard to conceive of the great foreign hospitals, like the Charité in Berlin, for example, deprived of their wards for chronic disease. They would at once lose much of their significance as teaching centres. Without such wards, where patients may be kept an indefinite time, it is evident that the student's ideas must remain fragmentary on many most important points. What can he know, for instance, of the day-to-day effect of the treatment of syphilis, or of the later aspects, when treatment is often most demanded, of many diseases of the nervous system? Argument in this line is, however, surely unnecessary. What I have said is offered merely as a protest against the too-broadly disseminated idea that an adequate clinical experience may be given students by the use merely of patients acutely sick. Until we have wards in all our hospitals for the main forms of chronic disease, they will fall far short of their possibilities for purposes of broad-minded medical teaching.

These, then, are some of the reasons which should lead us to take an active interest in the development of institutions for chronic disease; that the victims of chronic disease need the best possible care; that physicians may find among this class of patients a broad field for scientific research; that students require the instruction which the study of such cases can alone give.

When we face the facts regarding the development of a hospital on a broad scale for chronic disease in this community, we find that up to within a very few years nothing had been attempted. There have been

such institutions, as of necessity there must be in any large city, but they have never excited the interest of the medical profession at large, and have therefore subserved their function in an inadequate way. What we want is a hospital for chronic disease, which will take rank with the best of our hospitals for acute disease, and which will completely fulfil the ideal of a hospital in that it will receive worthy patients needing medical assistance until they have recovered or have died.

It will be many years before philanthropy or public spirit will set aside funds sufficient to establish and maintain such an institution. In the meantime the city is forced to take care of its dependent poor, and the almshouse and almshouse hospital have come into existence. This public institution is now situated on Long Island, in Boston Harbor, and is accessible only by boat. Its location is salubrious and desirable in certain essential respects, but inconvenient, as any island deprived of constant communication with the mainland must be. Like many city institutions, this one has had its vicissitudes; it has in the last few years passed through various jurisdictions, each of which has left it with definite marks of improvement. The present management, and it is to be hoped it may be permanent, is through a board of unpaid trustees. The hospital connected with this institution numbers about three hundred beds. The building is adequate to the work, but somewhat old-fashioned in construction, and designed rather for an infirmary than a hospital in the modern sense of the word. The first step toward direct medical supervision of the hospital and its patients was made in 1895, when a visiting staff was appointed by the institutions' commissioner. Since that time visits of varying but, on the whole, increasing frequency have been made by members of the staff, and through this means and the constant co-operation of those in authority, the hospital has gradually but steadily emerged from its former condition as a mere refuge for the hopelessly sick into a hospital which should prove of wide usefulness to the community. We are hardly prepared as yet to say that more than a beginning has been made; the continuance of the work must depend in great measure upon the interest taken by the people at large and particularly by the medical profession, for it is only through such means that the financial support necessary is likely to be forthcoming. To excite public interest in this phase of the city's charity is no easy task, but it may certainly be done ultimately by the demonstration that the hospital is doing creditable work for a class of patients whose needs are great and who are worthy objects of medical care. As at present organized, with four resident medical officers and a responsible visiting staff, the hospital is in a position to care for any case which comes within its scope. The establishment of a training school for nurses has worked a transformation in the appearance and discipline of the wards, and has already demonstrated the wisdom of its foundation. There is ample opportunity for practical training and for experience in the work which properly belongs to nursing. What I have already said of the value of the hospital for chronic disease in general applies to the Long Island Hospital in particular. Attention to its development will benefit the patients, as has already been shown in a large number of instances. Closer attention to the patients will undoubtedly benefit the physicians in charge and lead to investigations of value, and, finally, the possibility of using the hospital as a centre for teaching will increase its range of usefulness as nothing else could.

Certain departments of the hospital's work are perhaps worthy of special mention. In the first place, its ward for syphilis. At present the city has no adequate means of detention of persons ill with syphilis. The Long Island Hospital theoretically permits of detention by order of the physician in charge. The arrangement is in many ways unsatisfactory, but it may, and should, lead to a more rigid system, which will finally bring the disease under absolute legal control. A hospital in which such cases are treated in the wards must be the starting point of more enlightened action in caring for this dangerous class.

Patients ill with diseases of the nervous system naturally form a large contingent of the inmates of the hospital. To those interested in this line of work a unique opportunity for investigation is offered. Remembering the Salpêtrière and its history, one has no hesitation in saying that such an institution offers the very broadest field for neurological work. Disease processes are seen there in their simplicity and in their complexity, and always in sufficient number to make comparisons profitable and instructive; one's regret is that such a material should so long have been cut off from medical instruction.

Finally, this institution should do much to further the study of pathological anatomy. The organic lesions, the understanding of which is so fundamentally important to the student of medicine, may be seen in greatest variety and abundance. Here again this hospital supplements others in providing material which is not readily obtainable elsewhere. In this department of the hospital's work we have accomplished gratifying results, largely through the indefatigable enthusiasm of Dr. G. B. Magrath, who tells me that within a year he has done about fifty autopsies. This material has been studied and used, and has formed the basis of the only systematic instruction which has yet been attempted.

These are some of the reasons which lead me to have confidence in the successful future of the hospital. To accomplish this end it must be well administered in each of its departments.

When all is said, however, the fact remains that it is a pauper institution and must struggle under the stigma which that unfortunate term implies. It seems quite unreasonable that a patient sick for six months should be the city's charge without comment, and with no loss of esteem, while the patient likely to be sick for as many years should be placed under the ban of pauperism before he is admitted to hospital care. Dr. Henry Jackson has so forcibly expressed this inconsistency, in a letter recently received from him, that I quote it with his permission:

"I regret that I cannot hear your paper next Saturday, especially as I should like to propose a radical change in the assignment of cases to our chronic hospitals. I feel that admission to our chronic hospitals at Long Island and Tewksbury should be on the same basis as admission to the other hospitals, unhampered by the stigma of a pauper institution. I realize that it is only the question of a name, and yet people dread to apply for admission to the hospital of the poorhouse, who would only too gladly go to a hospital for chronic disease. I am certain that hereby we do an injustice to many worthy people, and from a financial

standpoint cause much unnecessary waste, in that patients are admitted for two or three months to the City Hospital, without any material gain to the individuals. I have expressed these views to Mayor Quincy. If you agree with me I wish you would say so at the meeting, and thereby perhaps inaugurate a reform that would prove a blessing to thousands. In other countries there are hospitals for chronic cases as well as for acute cases, but in Boston a person with a chronic disease must acknowledge that he is a pauper before he can be admitted to any public hospital."

With this statement of the case I should entirely agree. Some action must soon be taken in the direction indicated by Dr. Jackson if the Long Island Hospital and institutions of its type are to fulfil their completest function in caring for the chronic sick in a way consistent with justice and humanity.

THE NUTRITIVE VALUE OF ALBUMOSE PEPTONE.[1]

BY A. E. AUSTIN, A.M., M.D., BOSTON.

THE term "peptone" has been used incorrectly for a long time to represent the digested product of albumin, irrespective of whether any separation of the albumoses and peptones has been affected or not. Practically, however, all peptones which have been placed upon the market, like Witte's peptone or somatose, consist of a mixture of peptone and albumose in varying proportions, dependent upon the agressiveness of the digesting agent as well as the length of time the digestion is allowed to continue. This must of necessity be true; because (1) as is well known, any enzyme is soon rendered inactive by the products of its own activity, so that no albuminous digestion can be carried to its final product, peptone; and (2) the separation of these two products requires so much time and care, while the amount of product obtained is so small, that pure peptone is probably never seen except in the laboratory, and never commercially. Nor is separation of any importance except as a matter of chemical interest, for practically it has been shown[2] that albumose is equally as well absorbed as peptone; and even under certain circumstances acid albumin itself may be absorbed. This presupposes, of course, some change in its passage of the intestinal wall, for in the blood we meet only the native albumins. Whether we are to suppose that this change takes place by the action of the cells of the mucous membrane or of the white blood corpuscles, which are so enormously increased during digestion, we do not know; probably the latter. At any rate, it has been proven when peptone is injected directly into the blood it appears almost at once as albumose peptone in the urine, and the animal suffers more or less.[3] That this is due to the presence of peptone, and not to the accompanying peptotoxin of Brieger, has been fully proven. We must also take into consideration, as substantiating this fact, that as soon as the peptone becomes absorbed in the usual manner, that is, through the intestinal wall, its toxicity is lost. On the other hand, in some experiments conducted by me under Liebriech, I was unable to show that Witte's peptone lost a large portion of its toxicity when injected, if it were previously extracted with alcohol, and then only the purified peptone injected. Rabbits, one kilogramme in weight, easily withstood an amount of the substance thus treated, which had previously proved fatal to rabbits of like weight.

But it is not with this phase of the subject that we wish to interest ourselves in the following work, but rather with the actual value of peptone preparations as food stuffs. Of course, under normal conditions, one would not think of employing such preparations, for the native albumins, casein, globulin, hemoglobin, and the like, are readily and easily converted into assimilable and absorbable forms of nutriment by the digestive juices; but rather in those cases where from disease the peptonizing functions of the various ferments are lost or very much impaired. We could mention many such, atrophy of stomach mucosa, cancer, malignant disease of the pancreas, etc., in all of which digestion suffered most seriously. It, of course, can make no difference in what form the albumin is absorbed; it must always serve as a source of power to the body; a portion of the same must also serve to replace the cells which daily disentegrate and are lost. In the latter case the cells must be formed from the converted products of the absorbable albumin, that is, albumose peptone; and from feeding experiments we can learn whether such digestive products can fully replace the native albumin in the formation of cells. This has been answered in the affirmative by v. Gerlach,[4] E. Pfeiffer,[5] etc., but their experiments were carried out during a period of only ten to fifteen days, a period much too short to settle a matter of this importance. Both of these investigators found what, as we shall see later, was not met with by me, an irritation of the stomach and intestines, as evidenced by diarrhea and nausea.

My experiments were performed with a solution of albumose peptone[6] containing 12 per cent. alcohol for preservative purposes. At first it was necessary to determine its value in terms of nitrogen, for no matter in what form albuminous food may appear, its actual nutritive value depends upon the amount of nitrogen which it contains. This was determined by the Kjeldahl process, and it was found that in every 250 cubic centimetres of this fluid there were 3.85 grammes of nitrogen in the form of albumose peptone, entirely albumin free, for it could not be precipitated by heat, but was precipitated by acids and redissolved by heating, tests amply sufficient to identify this substance as albumose peptone. According to Hammersten, this would be equivalent to 118 grammes of lean beef or 24.06 grammes of albumin; or by actual quantitative determination, one gramme of Witte's peptone is found to contain 0.0532 gramme of nitrogen, and hence 250 cubic centimetres of this solution contain 72.4 grammes of albumose peptone.

I. FEEDING WITH ALBUMOSE PEPTONE ALONE DURING THE FIRST PERIOD OF SIX DAYS.

A dog weighing 10.88 kilogrammes was given 250 cubic centimetres of this mixture daily, and as the dog refused to take it, the fluid was poured into the dog's stomach through a stomach tube. The dog re-

[1] From the Chemical Laboratory of Tufts College Medical School.
[2] E. Bruecke: Ueber die Pepton-theorien. Setzungsber d. Wiener Akad., Bd. 59, ii, S. 617, 1869.
[3] F. Hofmeister: Ueber das Schicksal des Peptones im Blute. Zeit. f. physiolog. Chemie, S. 127, 1881.
[4] V. Gerlach: Die Peptone in ihrer wissenschaftlichen und praktischen Bedeutung. Hamburg u. Leipzig, 1891, S. 63.
[5] E. Pfeiffer: Berliner klin. Wochenschrift, Bd. 32, No. 30, 1895.
[6] This solution was furnished me by the Bovox Co., Salem, and is sold by them under the name of Hemapeptos.

ceived nothing but this, with the exception of all the water which it wished. On one day only was the feeding omitted. The dog rapidly lost weight and became weaker, weighing at the end of the second day 10.65 kilogrammes, and at the end of six days, when the experiment was interrupted, 10.2 kilogrammes, or a loss of 680 grammes. During this time the urine and feces were found to contain 28.552 grammes of nitrogen, while the food contained 19.25 grammes of nitrogen, showing a loss to the body of 9.27 grammes of nitrogen, which, multiplied by the constant factor 6.25, would give a loss of albumin in the body of 57.93 grammes, or 278.1 grammes of albuminous tissue as against the absolute loss of weight, amounting to 680 grammes. The difference may have been due to loss of water and fat, but of course is partially the result of error.

This proves conclusively that the peptone was absorbed and utilized as far as it would go, but though the dog was receiving much more albumin in proportion to its weight than a man of average weight (70 kilogrammes) would receive with a mixed diet (according to Bunge, 100 grammes), still the mere fact that the dog was compelled to supply the threefold function of food, namely, repair of cells, production of muscular energy and maintenance of heat with albumin alone accounts for the great nitrogenous loss. The most remarkable thing about the condition of the dog was the remarkable muscular weakness, so entirely out of proportion to the loss of weight. At the end of six days the dog was so weak that it was barely able to walk, and yet it did not appear to be so much emaciated as its weight shows.

II. ALBUMOSE PEPTONE AND CARBOHYDRATES.

The dog was given an abundant mixed diet for fourteen days, weighing then 11.33 kilogrammes. Then the second period was entered into with a diet consisting of 250 cubic centimetres of the peptone solution, daily, and 200 grammes of mashed potato, which contain, according to Bunge's tables, 4 grammes of albumin, 2 grammes of fat and 40 grammes of carbohydrate. This period lasted seven days, and while the dog lost the same amount of weight as in the previous period of six days, it remained strong and lively. During this period the dog took 23.1 grammes of nitrogen in the peptone (one day omitted) and 2.24 grammes of nitrogen in the potato, a total of 25.34 grammes of nitrogen, and during this time eliminated in urine and feces 34.62 grammes of nitrogen, showing still an enormous loss of the nitrogen constituents of the body in spite of the daily 40 grammes of carbohydrate. The weight diminished to 10.2 kilogrammes a difference of 1,130 grammes. The loss of 7.28 grammes of nitrogen (32.62 less 25.34) would be equivalent to 45.5 grammes albumin or 218.4 grammes albuminous tissue; the difference, as before, must be due to fat and water. Two agencies are evidently at work during this period to spare the albuminous tissue: (1) the additional amount of fat, as probably the additional weight at the beginning of this period was largely due to fat, and (2) to the albumin-sparing influence of the carbohydrate, for while the loss of weight is greater than in the first period, the loss of nitrogen from the body is less. This same method of feeding was now continued for eight days longer, making a total period of sixteen days, during which the dog's weight had fallen to 8.731 kilogrammes, but the dog was still active and showed no signs of weakness. During this period of eight days the amount of nitrogen taken was peptone 23.1 grammes and native albumin (potato) 4.48 grammes, a total of 27.58 grammes, and there were eliminated in urine and feces 29.25 grammes, or a loss to the body of 1.67 grammes, equivalent to 50.1 grammes albuminous tissue; the balance lost (1,469 grammes less this) must have been fat and water. Here we see illustrated the fact that the more emaciated the body becomes the more firmly it clings to its nitrogenous elements, and the nitrogenous loss steadily diminished in our three periods. This fact was also established by Senator and Munk[1] upon Cetti, the fasting man.

The nitrogen estimations were discontinued the next period, and weight of the dog was relied upon for the loss or increase of flesh. The food was now changed to 200 grammes of dried rice daily, well cooked, containing, according to Bunge, 16 grammes of albumin, 1.8 grammes of fat and 154 grammes of carbohydrates, and 250 cubic centimetres of the peptone mixture as before. Under this feeding the weight of the dog steadily increased from the initial weight of 8.731 kilogrammes to 9.978 kilogrammes on the eighteenth day and 10.499 on the twenty-eighth day. Here we find that while 24.06 grammes of albumin as peptone and 4 grammes of native albumin were unable to stay loss of weight, 24.06 grammes of peptone and 16 grammes of native albumin not only stay this loss but cause an increase of weight; hence a portion of the peptone is probably utilized to form increased albuminous tissue. To verify this still further the dog was now kept twenty-eight days upon a sole diet of 200 grammes of rice, or only 16 grammes of albumin. At the end of this time the weight of the dog was 11.565 kilogrammes, which shows that the peptone must be regarded as a tissue builder, as the dog had gained 702 grammes less than in the previous period of twenty-eight days. At no time during this entire experiment was there any vomiting or diarrhea. It seems to be conclusively proven:

(1) That it is impossible to maintain life upon peptone alone, as it is upon all other strictly nitrogenous foods.

(2) That, upon the addition of a small amount of carbohydrate, the nitrogenous loss from the body, with the same amount of albuminous food, is very much retarded.

(3) Peptone must be regarded as not only able to replace native albumin as a means of checking nitrogenous loss, but also as a means of increasing albuminous tissue.

(4) That, for a period of forty-five consecutive days, at least, peptone causes no diarrhea or disturbance of the stomach.

MR. TREVES. — Mr. Treves received a most enthusiastic send-off from a large number of students of the London Hospital at Waterloo station on Saturday last. A number of his colleagues and many personal friends were also present to say good bye. Mr. Treves sailed for Capetown in the *Dunvegan Castle*, which touched at Madeira on November 15th. The *Briton*, in which Sir William MacCormac and Mr. G. H. Makins are passengers, touched at Madeira on November 8th, and is due at Capetown on November 21st.

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[1] Berliner klin. Wochenschrift, 1887, 425.

Clinical Department.

A CASE OF OSTEOMYELITIS OF THE FEMUR. — A CASE OF KOCHER'S OPERATION FOR THE RADICAL CURE OF HERNIA.[1]

BY F. B. LUND, M.D., BOSTON.

Case I. This patient is of interest as being one of recovery from osteomyelitis of the femur in a very severe case in which, although amputation was thought of, a conservative operation proved successful. The patient, who is forty-two years old, is said to have strained his knee when seven years of age. A swelling appeared and afterwards broke, and in the course of a year or two several pieces of dead bone were extruded. He got about on his leg after that, but there has been ever since stiffness of the knee and more or less swelling. He has been engaged in an active employment. He came to the service of Dr. Monks at City Hospital the 29th of September, 1899, having had an attack of pain attended by swelling of the left knee seven weeks before. An incision had been made on the outer side of the thigh by a physician and considerable pus had escaped. The knee-joint was seen to be distended with fluid. There was great thickening and evidence of septic infection, extending up the whole length of the thigh, and a sinus discharging profusely on the outer side of the femur.

The writer operated under ether, making an incision on the outer side of the thigh. On reaching the bone it was found that the entire periosteum had been stripped off and the front and outer sides of the femur were bare. On chiselling through into the cancellous tissue of the lower end of the bone, it was found riddled with pus. The cancellous tissue was almost all gouged out and a continuous opening was chiselled on the outside of the femur almost to the trochanter, where the marrow appeared healthy, thus converting the bone into a trough instead of a tube. Incision of the knee-joint showed it was full of pus. It was drained by two anterior lateral incisions on each side of the patella and two lateral posterior incisions. The knee-joint was also opened from behind so that drainage of the knee was obtained by a large tube through the popliteal space. Another opening was made for drainage through the inflamed tissues on the outer side of the calf below, another on the front and inner side of the thigh. The whole shaft of the femur was packed with iodoform gauze, also the knee-joint.

The operation was borne very well, and the wounds steadily healed up without any interruptions, so that there are now no sinuses and his leg is in very good condition. He has a stiff knee, but he is now getting a little motion and is able to walk about without apparatus. It seemed almost a helpless case. The cultures from the marrow showed staphylococcus pyogenes and streptococcus. Nearly three months were required for complete healing. For one month there was quite profuse discharge from the femur and the knee-joint.

Various methods of draining septic knee-joints have been suggested, including the transverse incision across the patellar tendon and packing with gauze. This method does not give dependent drainage, and generally after ten days to several weeks the articular cartilage separates and another operation is required to remove it.

A limited experience with this method has been unsatisfactory and the case shown tonight, as well as others seen in the practice of colleagues have shown that for efficient drainage of the knee-joint the transverse incision across the patellar tendon is not necessary, as excellent results can be secured by lateral incisions and incisions through the popliteal space.

Case II. The other patient the writer had intended to show to-night, but who is not here, is a man upon whom Kocher's operation for radical cure of hernia was performed, in the service of Dr. William P. Bolles. It was an interesting case in many particulars. Of the various operations for the radical cure of hernia the writer has felt that the most satisfactory were those in which an attempt was made to restore the obliquity of the inguinal canal, employing the anatomical structures normally present, and in which the sac was not used as a pad to prevent hernia. The writer has therefore adopted Halsted's and Bassini's operations in a considerable number of cases, with very satisfactory results. If there has been any weak point after these operations, it has seemed to be at the internal ring where the cord came out. Attempts have been made to prevent that by carrying the cord upwards and outwards. Another difficulty has been that where the spermatic cord was surrounded by large numbers of veins which would have required a good deal of stretching to get the external aponeurosis over the top of it, it has been necessary to remove veins, and although no harm has resulted, it does not seem desirable to remove them all in ordinary cases.

The patient on whom Kocher's operation was performed was a laborer who had a hernia only six weeks, a left scrotal hernia as large as two fists. He had a severe bronchitis and had to hold the hernia in when he coughed. The ring was quite large. He had to be kept in hospital for a month before operation on account of this bronchitis, and when we did operate we wanted to do the quickest operation possible, and it seemed that Kocher's operation would be the quickest and best in that case; therefore that operation was performed. The sac was laid bare, dissected out and separated from the cord. A short incision was made outside and above the internal abdominal ring into the abdominal cavity and a pair of forceps passed down through the abdominal cavity to the bottom of the sac, which was turned inside out, drawn out through the little abdominal opening, sutured in place and cut off. This procedure brings the sac wrong side out lying as a pad along the back of the inguinal canal and of the spermatic cord. It is pretty hard to see how anything can get out after that is done and the canal sutured in front of the sac. The patient was troubled by constant cough during convalescence. He was kept in bed three weeks. After five weeks he went back to hard labor and he has now, three months after the operation, as solid a hernia scar as I have ever seen, with no weak spot at the internal ring.

[1] Cases presented at a meeting of the Surgical Section Suffolk District Medical Society, April 5, 1899.

A Test Case. — A test case brought in Omaha, Neb., to determine the legality of osteopathy in that State has resulted, according to the *Journal of the American Medical Association*, in the osteopath being found not guilty of the charge — practising medicine without a certificate. The case will be taken into the higher courts.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

BACTERIOLOGICAL EXAMINATION OF OPERATION GLOVES.

DÖDERLEIN was the first to make bacteriological examination of operation gloves. He was led to make his experiments by having at the conclusion of an operation made cultures from the bloody fluid squeezed from the cotton gloves worn during an operation, and was astonished at the large numbers of colonies of bacteria which grew on an agar petri dish in the brood oven. In an article on this subject,[1] he states that he feared for the life of his patient, who, notwithstanding, made an uneventful recovery, demonstrating that the body possesses the power of destroying bacteria, providing they are not of a specific and pathogenic variety. He then began a systematic examination of cotton gloves worn by himself, both during and after the operation, with the following results:

After thorough disinfection of the hands by Furbinger's method, cotton gloves, sterilized by same, were put on. Within fifteen or twenty minutes after the beginning of the operation, from a drop of fluid squeezed from the gloves countless colonies of bacteria could be grown. He observed that the gloves of assistants who handled the instruments of suture material were much less infected, proportionately less the drier and more free from blood their hands remained. Experiments were then made after sterilizing the hands as before, moistening the gloves in sterile salt solution. Instead of operating, the hands were now moved through the air, cultures being taken at intervals, and within half an hour colonies were found to develop. Experiments made with gloves permeated with paraffine, as recommended by Menge, gave no better results. Döderlein then began experimenting with rubber gloves. After sterilizing the hands, after Furbinger's method, the rubber gloves, which were sterilized by boiling, were put on. Cultures made from time to time during the operation from the gloves succeeded in developing colonies of bacteria, but in much smaller number than when the cotton gloves were employed. The author now concluded that if Krönig's view is correct that bacteria were held in the crevices of the epidermis, deep in folds of the skin, the masceration of the epidermis resulting from prolonged wearing of the gloves must set free countless bacteria. Great was his surprise to find after a prolonged operation that after precipitating the corrosive sublimate from the hands by ammonia sulphide, according to Geppert, in case cultures were made from the hands, the culture media remained entirely free from bacterial growth in most instances. This, Döderlein concludes, would indicate that the skin may be made entirely sterile in its deeper layers as well as the superficial surface, and that we must therefore regard the bacteria suspended in the air as the source of bacteria found on the gloves. From the experiments Döderlein concludes that the use of cotton gloves, instead of increasing asepsis, diminishes it, on account of the texture, which, when moist, furnishes such a favorable lodging surface for particles of dust and bacteria suspended in the air.

[1] Beiträge zur Geburtshülfe und Gynäkologie, Bd. i, A. 1, 1898; St. Paul Medical Journal, May, 1899.

BLOODLESSNESS AS A LOCAL ANESTHETIC.

Koffmann[2] calls attention to the fact that bloodlessness, as produced by the elastic tourniquet, makes the area below the band anesthetic if a sufficient time is allowed to elapse before the operation is undertaken, and if the area immediately below the bandage is not invaded. The bandage must in all cases be very tightly applied.

Braun,[3] in commenting upon this article, shows that it is only a revival of an old method which has long ago been rightly discarded. The anesthesia is not produced by the mechanical obstruction of the circulation and the bloodlessness of the region, but by the compression which the tightness of the band produces upon the main nerve-trunk. This is shown by the facts that it is produced by only the tightening of the band altogether, more than is required to effect the circulation, and also that the region immediately below the band is not anesthetized, although the blood supply is cut off.

This method is not only very painful in its after-effects upon the patient, but the compression is liable to result in an injury to the nerve trunk that is permanent, and may be followed by a necrosis at the point of pressure or by a permanent injury to the nerve.

INFILTRATION ANESTHESIA.

Heinze[4] has conducted a series of experiments that are of great value in determining the local anesthetic power of various agents that are now in vogue for this form of anesthesia. The tests were not made upon animals or upon various individuals seen in the course of clinical work, but upon his own person.

The action of varying anesthetic solutions he found to be due entirely to the amount of cocaine they contained, and not from peculiar properties that have from time to time been attributed to the combined action of their other constituents.

His experiments further demonstrated that the action of eucaine B and cocaine were equal. One reason of this is that, as shown by Braun's researches, their osmotic tensions are about the same. The anesthesia which they produce in 0.1 per cent., and still weaker solutions last about fifteen minutes. The irritant action of eucaine B is less even than that of cocaine; five- and six-per-cent. solutions were not as painful when injected as cocaine solutions of the same strengths.

The eucaine-B solution was found to be less toxic than cocaine, and has the advantage of being capable of sterilization. He recommends its employment in place of cocaine, and that it should be generally employed in infiltration anesthesia in weak solution, as in the following formula:

Eucaine B	gr. iss
Sodium chloride	gr. xij
Distilled water	℥ iij ad ℥ ij

Such a solution is capable of being sterilized at any time without interfering with its efficiency. It causes no swelling, and therefore does not injure the tissues or interfere with primary union. The eucaine B is the only anesthetic in the solution, the salt simply preventing irritation.

[2] Cent. für Chir., 1898, No. 40; American Journal of the Medical Sciences, June, 1899, p. 725.

[3] Cent. für Chir., 1898, No. 43.

[4] Arch. für path. Anat. und Phys., 1898, Band cliii, Heft 3; American Journal of the Medical Sciences, June, 1899, p. 726.

Braun [6] deals in a critical manner with the different methods that have been employed for local anesthesia — the mechanical form, that partly mechanical and partly due to drugs, and, lastly, that due entirely to the action of certain drugs on the terminal filaments of the nerves. This author agrees with Heinze that eucaine B and cocaine are the only drugs that really produce local anesthesia without harmful after-effects; they paralyze without irritation or injury to the tissues, and produce an anesthesia, in dilute solutions, that is sufficiently lasting for operative purposes. He recommends its employment in the same solution as given above, and for the same reasons prefers it to cocaine.

His researches and those of others have shown that while eucaine B, when employed in five- or ten-per-cent. solutions, cannot fail occasionally to produce symptoms of poisoning, it is an ideal and perfectly harmless drug when properly employed for infiltration anesthesia. When employed in the solution described above and sterilized it has never interfered with the normal course of healing in the wounds in which it was employed.

He notes the fact that this local anesthetic, like cocaine, cannot be employed where heat, as the actual cautery, is to be employed, as the heat destroys the anesthetic properties of the drug. The osmotically indifferent warmed solution of eucaine B is very serviceable in opening acute or chronic abscesses, and does not give rise to the pain so often noted with Schleich's solutions. He found the one-per-cent. eucaine-B solution far preferable to local infiltration anesthesia where it is desired to effect the conductivity of the nerve trunk and produce regional anesthesia, as in the fingers and toes. The action in these cases he considers all that could be desired. Six per cent. of salt should be added to all solutions. Undoubtedly there are cases in which the stronger solutions are preferable to infiltration of the tissues by the more diluted ones, but in general weak solutions should be employed where equally good results can be attained.

A NEW METHOD OF TEMPORARILY RESECTING THE PALATE.

Partsch, of Breslau, after criticising the various methods which have been devised to give access to nasopharyngeal tumors arising from the base of the skull, describes an operation which he has devised and carried out successfully in one case.[6] The operation is as follows: Incision along the line of reflection of the mucous membrane from the lip to the alveolus of the upper jaw. This cut is made from the second molar of one side to the second molar of the other. The bone is exposed with an elevatorium. The nasal cavity is opened by division of the mucous membrane all round the pyriform opening. The soft parts are retracted upward. With a chisel the nasal septum is divided just above the floor of the nose. In the same way the anterior and external wall of the antrum of Highmore is divided, just above the antral floor, as far back as the maxillary tubercle. With moderate pressure it is easy to turn the whole palate and alveolus downward like a trap-door. This gives a space in which the tumor will be found to lie within easy reach. After removal of the tumor the displaced tissues are readily replaced, and the wound in the mucous membrane is sutured. The bones readily unite and no visible scar is left.

THE DEVELOPMENT AND NATURE OF TUMORS OF THE SALIVARY GLANDS.

Hinsberg [7] summarizes the results of a careful clinical, microscopical, and pathological study of the various tumors that occur in these glands, as follows:

(1) The encapsulated tumors of the salivary gland, and probably those which involve them from other portions of the cranium, consist of epithelial elements and a stroma that is of the nature of bone cartilage.

(2) They are benign when they present an organic arrangement, as, for instance, the epithelium and connective tissue of a gland. They are malignant when this order is altered, and we find the epithelium, either from trauma or by operation, in a wrong relation to the surrounding tissues, as in the connective tissue of the parotid gland. It develops, then, without the early characteristic stroma. The latter is also wanting when the tumor is malignant; this the author has confirmed in a series of cases.

(3) Both components of the tumor — the epithelium and the stroma — develop from embryonal tissue in the Cohnheim sense. In the embryo the conditions for a common development are present, as the parotid as well as the submaxillary gland, before they are encapsulated, lie with individual acini close and firm in the periosteum of the inferior maxilla, that is, in the perichondrium of the Reichert's cartilage. The cylindrical epithelium comes undoubtedly from the gland itself, perhaps also the pavement epithelium, perhaps from the elongated layer of cells.

(4) The undoubted evidence which confirms the author in the opinion that the tumors develop from the endothelium of ths lymph spaces and ducts is the following:

He does not believe, with Volkmann, that these tumors commence in the endothelium or that the origin of the tumor can be found microscopically in the tumor itself. He believes that the tissues present in various stroma, especially the cartilaginous, osseous, and hyaline, are not the result of a metaplasia, but that they result from special conditions.

(5) He holds that the theory that they are the result of a combination of epithelium with osteochondromatous tissues from outside is justified by the fact that the nature of the epithelial cells has been shown to justify such a belief. The arrangement is epithelial in its exquisite delicacy, and the arrangement of the cells complex. The fact that sometimes there is no direct connection with the epithelium of the gland is not against this theory. Such connection is not to be expected since it is developed from embryonal tissue. The presence of osseous and cartilaginous cells admits of no other explanation, while the conditions for such development are present in the embryo.

THE OPERATIVE TREATMENT OF EMPYEMA OF THE FRONTAL SINUS.

Acting on the principle that in suppurative disease of a rigid cavity an outlet must be provided at the lowest point, Barth [8] has devised a simple and effec-

[5] Archiv für klin. Chir., September, 1898; American Journal of the Medical Sciences, June, 1899, p. 726.
[6] Archiv für klinische Chirurgie, Band lvii, S. 847; Annals of Surgery, April, 1899, p. 529.
[7] Deut. Zeit. f. Chir., 1899, Band li, Hefte 3 u. 4; American Journal of the Medical Sciences, July, 1899, p. 102.
[8] Archiv für klinische Chirurgie, Band lvii, S. 756; Annals of Surgery, April, 1899, p. 523.

tive plan for the inspection, treatment and drainage of the frontal sinus. A vertical incision two and a half centimetres in length is made near the side of the root of the nose. Through this the nasal bone and the nasal process of the frontal bone are divided with the chisel and turned outward. While only one skin incision is required, it is necessary to make three cuts in the bone, one vertical and two horizontal, so as to form a bone flap. The mucous membrane of the sinus bulging into the opening is opened, then cleaned, and temporarily packed. The upper part of the nasal cavity is next rendered completely free and patent by work done with chisel, bone-forceps, scissors, and forceps, so that there results a wide communication between nose and frontal sinus. Through the trap-door, which is the feature of this operation, one can examine the ethmoidal cells, and if they are involved can treat them. After again cleaning, if necessary curetting the frontal sinus, a drainage tube is inserted between the nose and the sinus and the external wound closed with sutures. Barth's patients have been able to resume their work as day laborers in two weeks.

DIVISION OF THE MOTOR NERVES AS A CAUSE OF VENTRAL HERNIA FOLLOWING EXTRAMEDIAN ABDOMINAL SECTION.

Assmy [9] states that if ventral herniæ were simply the result of a stretching of the cicatrix, the following anatomical conditions should be observed:

The yielding scar should represent the external covering, the hernial covering—the peritoneum—whether free or adherent, should represent the hernial sac. The pillars of the hernial orifice should be represented by the edges of the rectus muscle on either side, if the original incision was through its substance, or if external to it, on the outside, by portions of the oblique and transversalis muscles. Or, if the incision was still further removed from the median line, these last-named muscles would be found on either side. Instead of the above conditions the following is the actual finding: The scar does not alone constitute the external covering of the hernia; we find, in addition, normal skin—in other terms, the protrusion has gone beyond the boundary of the original hernia and involved the neighboring tissue. In operations for the relief of this condition it is customary to excise the edges of the ring, the tissue immediately adjoining the hernia being seemingly too atrophied to use. Till recently no systematic attempts seem to have been made to analyze the constituents of such tissues. A careful study, such as was made in a case in the Heidelberg clinic by Dr. Assmy will reveal conditions that may be summed up as follows: In extramedian incisions, parallel or nearly parallel to the linea alba, the terminal branches of the intercostal nerves supplying the rectus muscle are divided. There is no anastomosis with the nerves on the opposite side, and in all probability none with neighboring nerves, certainly not in the central portion of the muscle. Consequently, that part of the muscle distal to the severed nerve loses its innervation and undergoes paralysis and atrophy. In the further development of a hernia, the atrophic and hence unresisting portion of the abdominal wall is protruded in response to intra-abdominal pressure, just as the cheek is puffed out in unilateral facial paralysis. On the median side the scar loses its support as the atrophic muscles are useless. When contraction of the oblique and transverse muscles occurs, there is naturally a giving way at this point where two layers of weakened tissue exist. In great increase of abdominal pressure there ensues a stretching at the border of the cicatrix as well as of the cicatrix itself, and by the adherence of the sheath of the muscle to the scar, more or less of the normal muscular substance becomes involved in the external protrusion.

A series of experiments on animals accurately confirms the clinical experience. In view of such studies one must conclude that in lateral laparotomy the hernia is due chiefly to a neurotic atrophy. More care must hereafter be employed in determining the site and direction of the abdominal incision that the least damage may be inflicted on the motor nerves.[10]

[9] Annals of Surgery, May, 1899, p. 655.

OPERATIONS IN GASTRIC ULCER.

Bidwell,[11] in a paper read before the West London District Branch of the British Medical Association, sums up the class of cases of gastric ulcer in which an operation should be done as follows:

(1) In all cases of perforation at the very earliest possible moment; also in subphrenic abscess.

(2) In cases of hemorrhage (*a*) when there is continual oozing of blood, especially if the stomach be dilated, and (*b*) in cases of repeated severe hemorrhage.

(3) In cases where there is severe pain and vomiting unaffected by treatment, and which is producing progressive emaciation.

(4) In cases of dilatation of the stomach from contraction within or from adhesions outside the stomach.

The operations to be performed are: In class 1, laparotomy and suture of the ulcer; in class 2, gastrotomy and suture of the ulcer, with a purse-string suture combined with gastro-enterostomy; in class 3, gastro-enterostomy, in order to give physiological rest to the ulcer; and in class 4, either gastro-enterostomy, or, if the pylorus be affected, pyloroplasty or pylorectomy.

As the surgery of gastric ulcer is a comparatively new subject, the author states that he has had, so to speak, to make a case in its favor. It has been his endeavor to show that no patient ought to be allowed to die either from perforation, or from hemorrhage from a gastric ulcer, without a surgical effort being made to save him; that the earlier such effort is made the better the chance of success, and, finally, that surgery offers much hope of success in other cases which resist the art of the physician.

RESULT OF OPERATIONS FOR PYLORIC OBSTRUCTION.

Mr. Rutherford Morison,[12] at a meeting of the Clinical Society of London, brought forward a very interesting series of cases illustrating the result of operations for pyloric obstruction. The patients were shown at the meeting and the growths removed were exhibited by the lantern.

His first case was that of recovery after pyloroplasty for stricture of the pylorus. The patient was a woman who was operated on in October, 1894, the case being published in the *Lancet* of February 16, 1895, page 396. At the time of the operation she was fed entirely by the rectum. She was now in per-

[10] Beiträge zur klinischen Chirurgie, Band xxiii, Heft 1.
[11] American Journal of the Medical Sciences, September, 1899, p. 251.
[12] Lancet, April 1, 1899, p. 901.

fect health and could eat anything. He made an incision one and a quarter inches from the pylorus, passed a guide through it, and then made an incision through all the coats, and then sutured the incision so that the line of union was transverse to the incision. Mr. Morison performed this operation nineteen times, and the patients had all recovered. Relapses did not occur.

His second series of cases were cases of pylorectomy for malignant disease. The first of these was a woman, age forty years, who had had severe pain after food for six months, and vomiting and emaciation for two months. There was a tumor the size of an orange which could be felt near the umbilicus, and which proved to be a scirrhous mass. Pylorectomy was performed in October, 1897. She could now eat anything, was in good health, weighed one and a half stones more than before the operation, and there was no evidence of recurrence. The second case was that of a man, age forty-eight years, who had had severe pain after food and emaciation for some time. There was a growth of encephaloid cancer reaching nearly up to the pylorus, which was excised with the growth. He was now in good health and had gained nineteen pounds in the six months after the operation. The third case was that of a woman, age forty years, who had had pain and vomiting for a year. There was great dilatation of the stomach due to an adenocarcinomatous growth of the size of a walnut in the pylorus. She had gained two stones since the operation in September, 1898. His fourth case was that of a man, aged thirty-eight years, who had rapidly emaciated and suffered from pain and vomiting for ten weeks. There was an extensive colloid carcinoma involving the pyloric half of the stomach, which was removed, and the cardiac end was joined to the duodenum by a modification of Billroth's method. A chain of glands was affected and had to be removed. The patient was now in excellent health and there were no signs of recurrence. His fifth case was that of a man, age forty-one years, on whom pylorectomy had been performed six weeks ago for a small scirrhous mass. The man was now quite well and had gained more than a stone in weight. The operation was in Mr. Morison's opinion, safer than gastro-enterostomy and should be performed whenever the tumor was movable, the size of the tumor not being an important consideration.

ON THE SURGICAL ANATOMY OF THE BILE DUCTS AND A NEW INCISION FOR THEIR EXPOSURE.

Bevan[13] recommends a new incision for exposure of the bile ducts. He states that the incision should be divided into a primary portion and the extended parts of the incision. The primary part, which can be employed for exploration or simple cholecystotomy, is an italic letter *f*-shaped incision along or through the outer border of the rectus muscle. This may be made from three to four inches in length. The extended parts of the incision are added to this when required and can be made from an inch to three inches in length, as the thickness of the abdominal wall and the character of the operation demand. When complete, the incision furnishes much freer access to the gall-bladder and bile ducts than can be obtained by any other form of incision. The edges of the incision are readily held apart without tension, and the entire bile tract is freely exposed for examination and operative procedures.

Anatomically, the incision, for an incision of its length, injures a minimum amount of the nerve supply of the abdominal wall, because, even though the incision is made of great length, the extended parts of the incision run almost parallel with the nerve supply of the abdominal muscles. By a division of the rectus in part and of the internal and external oblique and transversalis muscles, the incision can be widely separated without tension. The fact that the incision is in close contact with the costal arch makes resulting hernia improbable, as a cicatrix in the upper part of the abdominal wall does not as readily yield and produce hernia as a cicatrix in the lower portion of the abdominal wall.

The following structures are divided in the incision: Skin, superficial fascia, external oblique muscle and aponeurosis, internal oblique muscle and aponeurosis, transversalis muscle and aponeurosis, rectus muscle, the transversalis fascia, which is here very thin, and the peritoneum. A few of the terminal branches of the intercostal nerves to the rectus are divided, and the anastomosis between the internal mammary and deep epigastric arteries in the substance of the rectus is divided, and usually needs ligating. The incision should not be nearer than three-quarters of an inch to the costal arch.

When the complete incision is made, the following structures can be seen: The liver and gall-bladder above, the round ligament of the liver and the stomach to the left; the duodenum, the transverse colon, and great omentum below. The transverse colon, and omentum and duodenum should be pushed downward, the stomach to the left, and the liver should be held up by the fingers of an assistant. Then will be exposed to full view the gastro hepatic or lesser omentum, which contains the following structures between its two layers: The portal vein, the hepatic artery, the common, cystic and hepatic ducts, the gastroduodenalis artery and pyloric vein, and the cystic artery and vein, the nerve supply of the liver and the lymphatic vessels and several lymphatic glands. The foramen of Winslow is at the right free edge of the lesser omentum. These structures and their relations are well seen after the anterior layer of the lesser omentum has been removed. The left index finger can be passed into the foramen of Winslow and the extrahepatic ducts palpated throughout their extent, except the portion of the common duct covered by the pancreas.

ABDOMINAL ANEURISM TREATED BY INSERTION OF SILVER WIRE.

Mr. Langton,[14] at a meeting of the Clinical Society of London, held March 24th, related a case of aneurism of the abdominal aorta successfully treated by the introduction of silver wire. The patient was a woman who had had an abdominal swelling since the birth of a child three months before. She had wasted, having lost two stones in twelve months. On admission there was a pulsating tumor in the epigastrium, three and a half inches in diameter, which was movable laterally but not vertically, and there was a loud systolic murmur over it. In April, 1898, as the swelling was increasing and the pain was very severe, an exploratory laparotomy was performed and the tu-

[13] Annals of Surgery, July, 1899, p. 15.

[14] Lancet, April 1, 1899, p. 901.

mor was found to be an aneurism of the abdominal aorta. A trocar was introduced into the sac and not much blood issued from the canula when the trocar was withdrawn. As there was some difficulty in introducing salmon gut into the sac, silver wire was used and five feet were introduced without difficulty. The puncture was secured with a silk ligature. There were some vomiting and a good deal of restlessness after the operation. A month later the tumor was carefully examined and it was found that consolidation was occurring. As a result of the manipulation, however, there was a return of the vomiting, a severe rigor and collapse. These alarming symptoms yielded to treatment and the after progress was uneventful. She had been seen from time to time and there was now a hard mass in the middle line much smaller than before the operation and the thrill and bruit had disappeared. Her health was excellent. There were only a few cases of successful treatment by this method on record.

(*To be continued.*)

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

HOWARD A. LOTHROP, M.D., SECRETARY.

REGULAR meeting Saturday, October 28, 1899, DR. HERBERT L. BURRELL in the chair.

DR. E. W. TAYLOR read a paper on

THE HOSPITAL FOR CHRONIC DISEASE.[1]

DR. POST: I have but little to add to Dr. Taylor's paper, but I do want to say in the first place one word in regard to the value of such a hospital as that on Long Island in some forms of surgical diseases; that is the one place in the city where the final results of surgical operations may be studied, and I am sure students who could make use of the opportunities there would gain different ideas occasionally of the value of some operations which they see only as they are performed in the amphitheatre. But the point on which I specially wish to speak is in regard to the connection of that hospital with syphilis. Syphilitics are not admitted to our general hospitals, and very properly. It is not right that patients with contagious diseases of any sort should be placed side by side with other patients in the wards. The regulations of one of our hospitals read that patients with venereal diseases are not admitted as free patients, I judge by the wording, not because they were thought of as dangerous to the other patients of the hospital, but because they were looked upon as patients who were not entitled to medical charity, and for that reason, where they are given treatment at all, they are relegated to the pauper institution. It is often said that patients with syphilis are individuals who are suffering from their own misdeeds, and it is hardly desirable that the community should furnish any special treatment for them. I do not know but it is superfluous to say in this meeting that that is an altogether erroneous view. The number of patients who are syphilitic by no fault of their own, but by extragenital contagion, is not far short of 10 per cent. The percentage of cases who are innocently syphilitic, who have the disease brought to them, or who are born hereditarily syphilitic, is very much larger. The number of innocently syphilized among women and children is something like 19 out of 100, so that even from that standpoint such patients deserve charitable treatment, and I am sure the genius of medical charity to-day would not look down upon any class as ruled out from medical charity. But it is not alone for the sake of patients themselves that such hospitals ought to have provision made for their care; it is as a protection to the community.

Our Board of Health is given autocratic powers — powers that rival those of the Czar of Russia, I imagine, in regard to small-pox and diphtheria — but with the ever-present evil of syphilis they are practically without power. We must, then, for our own protection — and the number of innocent inoculations of syphilis I have just mentioned emphasizes it — provide such opportunity for the care of syphilitics as this hospital alone gives us. And it seems to me that its wards ought to be opened more freely, and the suggestion of Dr. Jackson appeals to me particularly that the stigma of pauperism ought to be removed from syphilitics who enter the hospital, in order that they may more freely take advantage of the opportunity, because that is really the only way in which the public is protected. The advantages or the possibilities of a syphilitic clinic at Long Island Hospital as a teaching centre are very great. At present syphilis can only be taught in the ambulatorium. If we need to give syphilitics access to hospital wards for our protection, another additional means of protection of the community is the proper education of the students, and I am sure that the Long Island Hospital will repay its cost, considered simply as a refuge for syphilitics and as a means of teaching that subject.

DR. MINOT: There is very little to add to what Dr. Taylor and Dr. Post have said. The value of these hospitals to the patients is apparent to everybody. Cases which drag out a miserable existence at home can be put there and rendered comfortable, some of them may be practically cured, and a great many of them can undoubtedly be returned to work after an interval of proper care. Another important value of the hospital is the financial one — the question of cost in supporting these cases. Now, all the hospitals take chronic cases and keep them for a time, but at a high rate per week, whereas in the hospital arranged for chronic diseases the cost is very much less. I cannot compare the cost in the hospital at Long Island with the cost in the hospitals for acute diseases in Boston, because there is no separate account of the hospital expenses kept. The institution as a whole costs about $2.50 per week per inmate, and about one-third of the inmates at Long Island are in the hospital department; the City Hospital, $11 per week. In regard to the question of the stigma of the name of pauper, it is very desirable that that should be removed. That has been spoken about many times by the visiting staff to the commissioners and the present Board of Trustees, and they have all recognized the value of such a change. The objection, however, is a legal one and the law must be changed before it can be done. The name of the hospital itself has been changed. It is now not the hospital department of the pauper institution, but the Long Island Hospital. It was hoped that this difference in name might

[1] See page 542 of the Journal.

be of some advantage in persuading patients to go there. When they get there they are more than willing to stay. I think Dr. Taylor said there was no means of keeping syphilitics there except by their will. They can be kept there until discharged by the physician, but you cannot get them to the island except by their will. I believe that is the present law.

Dr. Coggswell: What I was going to speak about was the last remark of Dr. Minot. I came in just as Dr. Taylor was speaking about that. Before saying anything about that I should like to ask him if it was his impression that it was impossible to keep syphilitics in the Long Island Hospital against their will and that that was a desirable thing to do.

Dr. Taylor: I had supposed that any patient at Long Island could leave the institution if he insisted sufficiently upon it, whether syphilitic or not. If I was wrong in that impression, I am very glad to be corrected.

Dr. Coggswell: There is a law on the statute books to-day and placed there largely through the instrumentality of Dr. Fisher, at that time superintendent of the State Almshouse, and it is a law which is not enforced as much as it ought to be. I rendered myself decidly unpopular by enforcing it to the best of my ability at one time. Any person who becomes a public charge either through being placed in a prison or in a pauper institution can be retained in that institution until in the judgment of the physician in charge it is perfectly safe for him to go out into the community. If a man is once admitted to Long Island Hospital, and the physician in charge of the case thinks it is desirable to keep him there two years or five years, it can be done under the law. At Deer Island, when I was there, we used to keep them after their sentence had expired. If a man was sentenced there for thirty days and was in the acute stage of syphilis, we kept him sometimes six or eight months after his term had expired, but I don't know that it is the custom in other penal institutions or in any of the pauper institutions. If this matter was stirred up I think there could be a great deal made of it, and so much of advantage, at least, to the community, because that class, in my judgment, is responsible for at least 50 per cent. of the syphilis in the community and the spread of it. As I say, the man who is in charge of those cases renders himself decidedly unpopular; he is the butt of all the friends and relatives and political friends, and needs the support of all the physicians in the community at least. As to the expense to the city of the hospital at Long Island as against the City Hospital or Massachusetts Hospital, as Dr. Minot says, the accounts at Long Island are not kept separately, but for my own satisfaction I figured approximately the expense. It is a little less than $4.00 a week *per capita*, and you can see if they enlarged the hospital, or even at the present capacity, as against what it costs the city at the City Hospital, it is quite a saving and worth considering.

Dr. F. I. Knight: Some years ago I became deeply interested in the subject of a hospital for chronic disease in the State, and worked quite a little on the problem. What attracted me to it first was the getting of material for the Medical School. I felt then, as Dr. Taylor has said to-night, that there was a great need of that material. I did not put that first, when it was stated to the governor of that day, but the first consideration was the humanitarian one of separating the sick poor from the lazy well ones, and the next consideration was that if they were in the hospital, which I proposed in the near vicinity of Boston, that they would be better treated, would have a staff of visiting physicians who would understand the diseases, whereas at Bridgewater, at that time, they were simply living in what might be called a boarding-house, rather than a modern hospital; and, thirdly, I put the advantage of long study of cases and autopsies. We almost persuaded the governor to make the recommendation in his message, but there were various political considerations that came up, as usual, at that time that prevented that being accomplished, and without that we felt that we would not succeed at that time, and the thing fell through. I had a more successful time at the State House in connection with the hospital at Rutland. I was pleasantly astonished at the favorable reception which that proposition met with at once. There was no objection to it, and, in fact, the chairman of the Finance Committee, to whom it was referred, said: "I suppose you will want more of these institutions. You will need one in the western part and one down near Boston." I said: "Yes, I think we will." So that the temperature of the Legislature now is a good deal more in favor of such institutions than formerly.

Dr. Burrell: I would like to say a word in regard to hospitals for chronic diseases, and to make a suggestion for action of the Society, and if it could be put in the form of a motion it might be wise to do so. As this is the Suffolk District Medical Society, and the representative society in this community of the Massachusetts Medical Society, it might co-operate with the committee on legislation connected with the Massachusetts Medical Society. It does seem as if the stigma of pauper upon a person who through misfortune is chronically ill might be removed.

Dr. Magrath: Dr. Taylor has made mention of the value of the Long Island Hospital from the standpoint of pathology. During the past year we have had about fifty post-mortem examinations, the results of which have been of value not only to the hospital, its staff and its training school, but also to the students of the Medical School. At the Medical School we depend quite largely upon the material from this for teaching many of the chronic diseases — chronic tuberculosis, chronic diseases of the nervous system, chronic nephritis, chronic disease of the heart; all of those are instances of lesions difficult to be had from the other hospitals. It is very rarely that we examine a case at Long Island which does not present one or more of the lesions which I have named. During the present school year it has been possible to give the members of the present second class the benefit of the Long Island Hospital autopsies. The members of that class are receiving a great deal of instruction in morbid anatomy from material in the recent state, and we are very glad indeed of the opportunity which the Long Island Hospital offers for the study of chronic diseases.

Plague in Algiers. — In Algiers, where a case of plague has been reported, and where certain other cases of a suspicious character have occurred, the authorities, it is reported, sealed all the sewers hermetically and then burned chemical products, the fumes of which destroyed all the rats. This is a step which might be followed with advantage by all municipalities which are threatened by plague.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

REGULAR meeting, Wednesday, April 5, 1899, DR. J. W. ELLIOT in the chair.

DR. M. H. RICHARDSON read a paper on

THREE CASES OF PYLOROPLASTY FOR STRICTURE OF THE PYLORUS.[1]

DR. ELLIOT: We have with us this evening a distinguished surgeon from New Haven, Professor Carmalt, whom I am sure the Society would like to hear on this subject.

DR. CARMALT: I have very little to say. The opportunities for doing pyloroplasty do not occur often, and Dr. Richardson's success has certainly been very satisfactory. The criticisms which he made with regard to the Heineke-Mikulicz operation, where he makes the longitudinal incision, is a theoretical objection which had already occurred to me. I can easily see the great difficulty in bringing those ends together owing to the thick wall. We have all been very much interested in the paper, and I don't know that I can add anything to it, sir, though I am much obliged for the courtesy of giving me the opportunity.

DR. ELLIOT: I think this is one of the most promising fields for modern surgery, because the pylorus is so frequently the seat of disease. I was much impressed by the fact that Dr. Richardson's patient who drank the acid was injured not in the mouth or throat but in the pylorus. I have no doubt that an exploratory operation would be useful in certain undiagnosed stomach cases. The improved results in these plastic operations and the pylorus resections make it possible to cure many distressing cases. I think that all surgeons who see the operation or operate on the pylorus would quite agree with Dr. Richardson's suggestion that where there is a great amount of thickening a plastic operation is not the one which is indicated. The plastic operation implies that you can slip the tissues into place, whereas if there is a real thickening the tissues will not slide and the stitches cut out. This tissue should then be excised even if it requires a resection of the pylorus.

DR. RICHARDSON: It seems to me that the dissection must depend upon the situation and extent of the cicatrix. As I stated, in some instances it seems much better to excise practically all the pylorus, even if you have to take out the posterior wall. It makes it more difficult if you have to take out the posterior wall — I mean the mesenteric attachment — for it is there that the leak takes place. I was disappointed in my second case, for I felt that if I had taken out a complete V or excised the whole disease and made an end-to-end suture, as Dr. Cabot suggests, it would have been certainly a sure operation, and I do not believe would have added materially to the risk. The Heineke-Mikulicz method was devised partly to avoid the risk of pylorectomy, which risk has always been very great, but you convert a longitudinal slit into a transverse one and make quite as large a wound as if you take out a V. The stitches tear out more easily and the tissues are friable and the tension is greater. My experience would lead me to carry out in future cases that very point Dr. Cabot raised, to be sure that the first operation should be final, even if I had to resect the whole pylorus, so that (1) the parts would come together in an easy way; (2) there would not be any tension, and (3) there would be sure to be a lumen of sufficient size.

DR. ELLIOT: Speaking of contraction of the pylorus giving rise to no symptoms, I was operating for gall-stones the other day and thought I would look at the pylorus. It was evidently contracted, so that I could hardly put my little finger into it. There had been absolutely no stomach symptoms at all.

DR. F. B. LUND read a paper on

I. A CASE OF OSTEOMYELITIS OF THE FEMUR. II. A CASE OF KOCHER'S OPERATION FOR THE RADICAL CURE OF HERNIA.[2]

DR. ELLIOT: I am very much interested in Dr. Lund's case of hernia treated by Kocher's method, which seems to me theoretically to be unsound. I have not done the operation, because I supposed it was based on an unsound theory. Theoretically I do not see how you can hope to securely plug a hole between muscles with something that depends on the gluing of the peritoneum. A familiar example of what might be expected to happen may be observed in a case of ordinary umbilical hernia. Here we have a hole, plug it as tightly as you please with omentum, and it still keeps on pushing out; in other words, the peritoneal adhesions wont hold the contents of the abdomen from sliding through the hole. We made a great advance in the theory of hernia when we came down to Bassini's and Halsted's methods of actually sewing the aponeurosis, for we know that if there is a nick in the aponeurosis we get a bulging through; that I supposed was the essential cause of hernia. I was very much surprised that a man as great as Kocher should have invented this operation, and it is interesting to see such a difficult case cured by that operation. I suppose, however, that not long enough time has elapsed to call Dr. Lund's case cured.

AMERICAN PUBLIC HEALTH ASSOCIATION.

TWENTY-SEVENTH ANNUAL MEETING, HELD AT MINNEAPOLIS, MINN., OCTOBER 31 AND NOVEMBER 1, 2, AND 3, 1899.

FIRST DAY. — MORNING SESSION.

THE Association met at the First Unitarian Church, and was called to order by the President, DR. HENRY MITCHELL, of Newark, N. J., at 10 A. M.

There were 110 new members elected to membership.

DR. HENRY B. HORLBECK, of Charleston, S. C., Chairman, read the

REPORT OF THE COMMITTEE ON THE ETIOLOGY OF YELLOW FEVER.

He referred to a commission which consisted of Drs. E. Wasdin and H. D. Godding, sent to Havana, 1897–1898, by the Marine-Hospital Service of the United States, to study the cause of yellow fever, and under date of July 10, 1899, this commission reached the following conclusions:

(1) That the micro-organism discovered by Sanarelli, and by him named the bacillus icteroides, is the cause of yellow fever.

(2) That yellow fever is naturally infectious to

[1] See page 537 of the Journal.

[2] See page 547 of the Journal.

certain animals, that in some rodents local infection is very quickly followed by blood infection, and that while in dogs and rabbits there is no evidence of this subsequent invasion of the blood, monkeys react to the infection the same as man.

(3) That infection takes place by way of the respiratory tract, the primary colonization in this tract giving rise to the early manifestations of the disease.

(4) That in many cases of the disease, probably the majority, a primary infection or colonization in the lungs is followed by a secondary infection, or a second colonization of this organism in the blood of the patient. This secondary infection may be complicated by the co-instantaneous passage of other organisms into the blood, or this complication may arise during the last hours of life.

(5) That there is no evidence to support the theory advanced by Professor Sanarelli that this disease is primarily a septicemia, inasmuch as cases do occur in which the bacillus icteroides cannot be found in the blood or organs in which it might be deposited therefrom.

(6) That there exists no casual relationship between the bacillus X of Sternberg and this highly infectious disease, and that the bacillus X is frequently found in the intestinal contents of normal animals and of man, as well as in the bronchial secretion.

(7) That so far as the commission is aware, the bacillus icteroides is never found in any body other than one infected with yellow fever, and that whatever may be the cultural similarities between it and other micro-organisms, it is characterized by a specificity which is distinctive.

(8) That the bacillus icteroides is very susceptible to the influences injurious to bacterial life, and that it is readily controlled by the processes of disinfection, chemical and mechanical, is assured.

(9) That the bacillus icteroides produces *in vitro* as well as *in vita* a toxin of the most marked potency, and that from our present knowledge there exists a reasonable possibility of the ultimate production of an antiserum more potent than that of Professor Sanarelli. As there is such a wide divergence of opinion with reference to the bacillus icteroides in its relation to yellow fever, the committee believes the organization of an able and full commission of bacteriologists, fully equipped and provided with ample means, should be effected, which shall be permanently located in one of the yellow fever infected cities. Sufficient remuneration should be provided, so that the highest talent in bacteriology may be engaged.

DR. E. LICÉAGA, of Mexico City, Mexico, presented his

EIGHTH ANNUAL REPORT OF THE COMMITTEE ON YELLOW FEVER

of the cases observed in the Mexican Republic, from the date of his first report, September 12, 1898, to September 15, 1899. He also gave a description of the sanitary stations about to be established in the Mexican Republic to prevent spread of yellow fever.

DR. ISMAEL PRIETO, of Mexico City, presented data for the

BACTERIOLOGICAL STUDY OF YELLOW FEVER.

DR. NARCISO DEL RIO, of Vera Cruz, Mexico, read a paper, in which he pointed out the necessity of making complete and general disinfection of a vessel in order to make the disinfection efficacious, and advanced arguments to prove that partial disinfection is useless in cases of yellow fever.

In the discussion, DR. THOS. J. TURNER, of Cold Water, Mich., agreed with the essayist, and stated that disinfection to be useful should be general and thorough as far as cleanliness is concerned. He believes the germs of yellow fever are carried by articles rather than by persons.

DR. ANTONIO MANTIENZO, of Tampico, Mexico, followed with a paper, in which he advanced considerable evidence to show that yellow fever is a preventable disease.

AFTERNOON SESSION.

PROF. WM. H. WELCH, of Baltimore, addressed the Association on

THE RELATIONS OF LABORATORIES TO PUBLIC HEALTH.

He said that laboratories devoted to the study of hygiene are of comparatively recent date, the first being started by von Pettenkofer, of Munich, in 1878. This laboratory contains hygienic, physical, chemical and biological departments. The problems pertaining to the disposal of sewage, public water supplies, the prevalence of epidemic diseases, and more especially cholera and typhoid fever, are dealt with; also the relation of typhoid fever to ground water, and the results of investigations conducted by this laboratory are of intestimable value to the inhabitants of Munich, a city which was once the very hot-bed of typhoid fever, but which is now so free from this disease that von Ziemssen said it was difficult to give practical demonstrations to medical students of the lesions of typhoid. It was about this time that Koch introduced his remarkably simple methods, which effected the isolation of bacteria of certain infectious diseases. The stimulus of these great discoveries led to the rapid foundation of hygiene laboratories in connection with universities and with boards of health, so that within a few years nearly all the great universities in Germany are provided with hygiene laboratories.

Another factor which has exerted a great influence in the development of hygiene has been the occurrence of epidemic diseases, such as cholera, and in this country yellow fever, and possibly it may turn out in the east that the plague may have a similar influence upon public sanitation.

MRS. ELLEN H. RICHARDS, of Boston, spoke of

UNIVERSITY LABORATORIES IN RELATION TO THE INVESTIGATION OF PUBLIC HEALTH PROBLEMS AND TO COMMERCIAL WORK.

For the investigation of questions of great importance and wide bearing, the university laboratory is likely to be the best place just as soon as the university authorities realize its value as a factor in higher civilization. She said that the head of a sanitary laboratory should be a man of absolute probity. His opinions should not be purchasable at any price. He should have unbiased judgment. He should be well versed in methods of research. He should be patient, quick in action, and well balanced.

PERSONAL EXPERIENCE IN DISINFECTION.

DR. WYATT JOHNSTON, of Montreal, narrated the results of his experience during the last three years with formaldehyde as a disinfectant. Steam, sulphur

and other methods of disinfection were tried. He believes there are relatively few conditions under which steam is now necessary for disinfection. Formaldehyde, properly employed, fulfils all the requirements for municipal and household disinfection. There are, however, certain conditions under which steam seems indispensable, particularly where considerable penetration is essential; but where it is necessary to make rapid disinfection of clothing, bedding, etc., in a hospital, steam is preferable when the articles have to be used immediately afterwards. Formaldehyde emits certain odors afterwards which render it unsuitable for rapid work. The penetrating qualities of sulphur vapors are deficient, unless the sulphur is used in such large quantity as to cause serious damage. With formaldehyde he has never done serious damage to the articles that were disinfected by it, and he has no doubt that this is the experience of other observers.

In the discussion which followed, the general consensus of opinion was that formaldehyde is one of the best, if not the best, disinfectants that have been brought before the profession in the last two or three years.

EVENING SESSION.

At this session addresses of welcome were delivered on behalf of the city of Minneapolis, by HON. JAMES GRAY, Mayor; on behalf of the State, by DR. SAMUEL G. SMITH, of the University of Minnesota; on behalf of the local medical profession, by DR. H. B. SWEETSER, President of the Hennepin County Medical Society, and by CYRUS NORTHROP, LL.D., President of the University of Minnesota.

The President, DR. HENRY MITCHELL, of Asbury Park, N. J., then delivered his Address. He selected for his subject

A REVIEW OF THE SANITARY PROGRESS DURING THE YEAR.

He stated that public interest in all questions relating to the development of a working system for carrying into effect the rapidly unfolding truths of sanitary science has been one of the most prominent features of the period which has elapsed since the Association was organized. During this period have occurred nearly all of the substantial improvements in municipal sanitary administration which at present stand engrafted upon our systems of government. He referred in general terms to recent sanitary progress, and spoke more specifically concerning a few of the details relating to the prevention of disease, including sanitary legislation, education of sanitary officers, decrease of infant mortality, vaccination, typhoid fever, tuberculosis, adulteration of foods, and local, State and national sanitary administration. During the twenty-seven years which have passed since the organization of the Association, legislation designed to protect and promote the public health has been obtained in almost all of the States within the territory represented in the membership, and efforts are now being made to secure a greater degree of uniformity in these enactments and in the methods to be pursued in their enforcement, at least so far as they are related to interstate questions.

The hygienic control of milk supplies has assumed a better working basis in numerous localities, and the popular demand for clean milk is beginning to meet with response from a few of the more progressive dairymen.

The history of the morbidity in the military camps of the United States during the recent war with Spain had demonstrated anew the truism that cleanliness of water and food is an indispensable condition to health, and typhoid fever by its prevalence in these camps has further justified its selection as a typical illustration of the value to the public health of a rigid application of the principles of hygiene. The reduction of the death-rate in typhoid fever has been very largely effected by the improved sanitary conditions in towns, and the relations which formerly existed between the urban and the rural districts are now completely reversed, the proportion of cases of typhoid occurring in scantily populated regions being much larger than in towns.

Further study of the methods by which the spread of tuberculosis may be restricted has also engaged much of the attention of local sanitary authorities during the past year, but no general agreement has yet been reached concerning the course to be pursued for the prevention of this disease.

Conservative recommendations for checking the prevalence of tuberculosis include the inspection of all bovine animals, meat, dairy produce, and dairy premises; destruction of diseased animals, and the prohibition of the sale of diseased meat and milk; exclusion of diseased persons from markets, dairies and other premises where food is prepared or sold; frequent and regular disinfection of public conveyances and places of public assembly; disinfection of all infected apartments after death or the removal of patients.

Dr. Mitchell then dwelt upon the necessity for establishing in the United States a national department of public health, saying that its importance has been strengthened by recent events, the addition of tropical possessions having added new responsibilities to those already borne by the General Government, requiring investigations concerning the distribution and character of preventable diseases occurring throughout the entire territory occupied by the nation.

SECOND DAY. — MORNING SESSION.

DR. PETER A. BRYCE, of Toronto, presented the

REPORT OF THE COMMITTEE ON THE CAUSE AND PREVENTION OF INFECTIOUS DISEASES.

He said that the past year has been fruitful in experimental work and discoveries in a field which, if not new, is one which has hitherto received but little attention. So early as 1870 Davaine attributed to flies an important part in the spread of anthrax from dead infected materials to living animals, and in the past five years positive experiments have added to the knowledge of the subject. It has been very well established that flies by sucking the blood of diseased persons can transmit disease. Localized epidemics of dysentery have been caused by flies carrying infection from fecal matter.

The essayist referred to Simond's paper, which appeared in the *Annales de l'Institut Pasteur*, in which is reviewed the origin of the epidemics of the plague observed since 1898 in China and India, based on personal investigations in Tonkin and later in Bombay. In tracing its spread abundant evidence is adduced to show that while man may be the occasional agent of the transmission of plague, he is only indirectly so, and then the author points out the rôle played by the rats as the principal source of its propagation. In general,

he states that the epidemic of plague is preceded by an epidemic swarming of rats, and shows from many illustrations that the first persons attacked with plague are those in quarters where grain is stored up and who are actually employed in granaries and storehouses, as along the quays; and he further illustrates how, through rats in the holds of ships, the disease is carried from port to port. It is pointed out further that the contagion from person to person in hospitals is wholly exceptional, and many physicians in plague hospitals refuse to admit the contagiousness of plague.

Dr. Bryce quoted from a series of reports by Dr. John Simond, the greatest of all sanitarians, who said, in 1874, in the prevention of disease we must remove the cause of uncleanliness, that is, remove filth. This eminent sanitarian then illustrated the varieties and degrees of filth as (*a*) putrescent refuse matter, solid and fluid, causing effluvia and pollution by soil soakage; (*b*) overcrowding, thus polluting the two sources of public health, air and water.

Dr. Bryce concludes by saying: (1) Thus we may as regards typhoid fever arrange the garbage and sewage-disposal works of houses, towns, camps, so as to make impossible local accumulations of organic vegetable and animal pollution, wherein the typhoid germs may grow, and from which they may be carried to food and drink; (2) by drainage prevent soil pollution by either vegetable or organic matters, so that mosquitoes may not breed in the vicinity of habitations and so be in a position to become disseminators of the malarial parasite, and if they are present, protect houses against them, especially at night; (3) by so constructing houses as to render them inaccessible to rats, and to maintain in these such a condition of cleanliness of rooms, clothing and persons that infected matter will not be present, or, if introduced, there may not be flies to carry it; (4) as regards ships, the very means which are now in practical operation in well equipped quarantine stations will amply serve to destroy rats, that is, sulphur and formol; (5) by detaining passengers longer than is necessary for the disinfection of a ship and the elapsing of the period of incubation for plague of five days, to which, in the presence of actual infection, may be added a protective inoculation.

DR. FRANK W. WRIGHT, of New Haven, Conn., read a paper on

PREVENTION OF CONTAGIOUS DISEASES.

To prevent the spread of contagious diseases two objects must be accomplished: *First*, the destruction of the poison given out from the sick person by disinfection, and, *second*, the prevention of any poison that has escaped disinfection from coming in contact with susceptible persons — isolation. Certain diseases may be limited by rendering persons immune to inoculation, as in small-pox and diphtheria, it being now practically impossible for the former of these diseases to obtain a firm foothold in any well vaccinated community. A good hospital for the accommodation of persons affected with contagious diseases should be maintained in every State. The writer found a short time ago by inquiry that of sixty-two principal cities in the United States and Canada, less than one-quarter were provided with decent contagious-disease hospitals, some not even having a place for the care of small-pox patients. He believes many lives are sacrificed by contagious diseases annually that could be saved if all persons would conscientiously give attention to details and lend their support both morally and financially.

DR. J. E. MONJARAS, of San Luis Potosi, Mexico, dwelt upon transmissible diseases in that city and made some general remarks on their etiology and prevention.

In the discussion, DR. CHAS. A. LINDSLEY, of New Haven, Conn., made the point that the work of enforcing health laws was much facilitated by placing the authority for prosecution directly in the hands of an attorney, rather than leaving it with a doctor, who knew nothing about law. He had found that this plan added much to the effectiveness of work in his State. Reports of infectious and contagious diseases had much improved there of late both in accuracy and promptitude.

DR. CHAS. V. CHAPIN, of Providence, R. I., made an argument for thorough teaching of modern scientific hygiene in universities and medical schools.

DR. WYATT JOHNSTON, of Montreal, said that the great trouble was that the time at the disposal of the professors in the schools was so limited as to prevent the introduction of adequate courses. He suggested that diploma courses in hygiene in the universities be introduced and advised the appointment of a committee to further his proposition.

DR. CHAS. O. PROBST, of Columbus, Ohio, related his experience along this line at the University of Ohio, where an attempt was made to hold a hygienic course, but which was defeated by the entire lack of interest upon the part of the class from which the students would be drawn.

DR. BENJAMIN LEE, of Philadelphia, advocated the more general teaching of hygiene in colleges and universities.

DR. SAMUEL H. DURGIN, of Boston, spoke on the system of medical school inspection in Boston. The schools are visited every day by physicians, who examine any suspicious cases. These physicians are also charged with the duty of seeing that all cases of infectious diseases are properly isolated.

DR. JOHN N. HURTY, of Indianapolis, said that the jealousy of business men was an important factor in enforcing health laws, and he gave an account of a recent epidemic of small-pox in Valparaiso, Ind., which was reported as chicken-pox by the physicians in that city, supposedly because merchants said it would hurt business. The foolishness of such a course was pointed out. The Indiana State Board of Health proposes to require a certain standard of knowledge of its health officers.

(*To be continued.*)

Recent Literature.

Saunders' Medical Hand-Atlases. Atlas of the Diseases of the Skin, including an Epitome of Pathology and Treatment. By PROF. DR. FRANZ MRACEK, Vienna. Authorized translation from the German. Edited by HENRY W. STELWAGON, M.D., Ph.D.

The volume of Hand-Atlases dealing with diseases of the skin is well up to the standard of its predecessors. In the introductory text, an excellent *résumé*

of the different affections of the skin is to be found, well translated by Dr. Stelwagon, who has added a judicious comment here and there. The atlas is made up of sixty-three colored plates and thirty-nine full-page half-tone illustrations. As a whole, the plates are surprisingly good, and are as well suited to the needs of the general practitioner as those of the large and expensive atlases. Most of the material for the illustrations was obtained from the author's own clinic, and a short description of the case depicted is found opposite each illustration. Dr. Stelwagon's comments are invaluable in explaining many points that would otherwise be obscure to the English reader. Altogether, the book may be highly recommended to the general practitioner.

An Introduction to Dermatology. By NORMAN WALKER, M.D. New York: William Wood & Co. 1899.

This book of about two hundred and fifty pages is essentially a reproduction of the lectures delivered by the author for several years to his students in Edinburgh. It does not claim to be a complete treatise, as many of the less common diseases are either briefly referred to or omitted. As might be expected of the translator of the "Histopathology of the Skin," the book is based essentially on the teachings of Unna. The latter's classification of cutaneous diseases is adhered to in the main, with its long list of infectious inflammations, including ichthyosis and rosacea. The book is written in a readable way, with a style of its own, differing from that of the ordinary text-book. To many dermatologists the prominence given to most of the as yet unproved theories of Unna will seem undesirable in a book intended for the general practitioner. The colored plates, of which there are thirty scattered through the book, are not of a high order, although some of the photographic illustrations are good. The author has also inserted numerous figures of his own microscopical work, which are of varying excellence.

Saunders' Question-Compends, No. 11. Essentials of Diseases of the Skin, including the Syphilodermata, arranged in the Form of Questions and Answers; prepared especially for Students of Medicine. By HENRY W. STELWAGON, M.D., Ph.D. Fourth edition, thoroughly revised. Illustrated. Philadelphia: W. B. Saunders. 1899.

This little manual has reached its fourth edition, which represents a thorough revision of its predecessors. It comprises also a number of the more rare affections of the skin upon which light has been thrown by recent research. The book shows signs of care in compilation, and may be recommended to those who are inclined toward this method of imbibing knowledge.

THE memorial erected to young Dr. Mueller, the victim of the laboratory plague at Vienna last year, as stated in the *Journal of the American Medical Association*, consists of a bronze bust on a marble pedestal, with relief representing Marcus Curtius, the Roman hero. It is erected in the eighth court of the general hospital, near Nothnagel's clinic, in which he was an assistant. Nothnagel delivered an address at the unveiling of the statue.

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THE FEMALE NURSE IN THE ARMY.

As is now well known, our late war with Spain brought upon the Medical Department of the Army a peculiarly trying series of exigencies, from which, no doubt, many lessons of importance have been learned. One experiment, which caused no little comment at the time, and has since been the subject of considerable discussion, was the extensive employment of women nurses. Every one was, naturally, interested in the matter, and opinions, often without adequate knowledge of the facts, were freely expressed on all sides. What we needed, however, in this, as in other matters of policy, was a clear statement of the facts from one who knew. This opportunity of forming a judgment in the matter has now been offered by a fair-minded and judicial paper, by Col. Dallas Bache, Assistant Surgeon-General U. S. A., published in the *Journal of the Military Service Institution of the United States.*

In this paper Colonel Bache first discusses the make-up of the hospital corps in times of peace. For the purposes of caring for the sick at such times, the hospital corps was adequate and well trained. It was, however, quite insufficient to meet the enormously increased burden put upon it in time of war, hence the difficulties that at once arose. It soon became necessary to increase the service, and among the various methods employed, the woman nurse came in for her share of attention. Colonel Bache states clearly the situation at our various military camps, and gives the well-known statistics of typhoid fever, reaching its maximum extent in August and September, 1898. He willingly admits the inefficiency of the medical department, but he says: "All this is not the story of the failure of the medical department to do properly what it was intended to do and to work effectively with its tools, but in a way it is the story of the failure of the frog to become an ox suddenly, a failure to improvise means, aptitude, discipline and organization. Incidentally it is also the story of the advent of the female nurse." It is insisted that the employment of

the female nurse in the army was in no way a revelation, since the experiment had been made in a smaller scale from the days of the Crimea.

During July, 1898, the appointment of women to work in field hospitals began, and once begun, proceeded rapidly, as a necessity of the situation, since a sufficient force of trained male nurses could not be had. The first detachment, four, was supplied to the general hospital at Key West, May 10th, the number generally assigned reaching 50 by July 1st; 162, July 31st; 362, August 15th; 924, August 31st, and 1,158 by September 15th. Since the end of the war, the number has been reduced; on March 15th of this year it was 343. Fourteen have died as a result of exposure or infection. Colonel Bache sees in the large number of men who were hurriedly employed for purposes of nursing, well-meaning persons willing enough to do their duty, but quite unprepared. As he says: "You cannot sow a resolution for training, nor a good intention and reap a crop of experts." Hence, no doubt, the women, with their better training, were much more immediately serviceable. The argument here advanced by Colonel Bache is, that if means are taken in times of peace to properly train and equip a hospital corps, the necessity for the female nurse will, in great measure, be removed in the event of war. He is most strongly of the opinion that the division hospital is certainly not her place. This hospital is the unit of medical field service and as such has no luxuries. It must, at best, be meagrely supplied with furniture and conveniences; it must be capable of being moved from place to place with great despatch; its function is one of immediate necessity. Under these conditions the female nurse, according to Colonel Bache, has absolutely no place.

He is equally convinced that women should not be employed on transports, or hospital boats or trains, and maintains that the work of nursing under these circumstances may be done as well or better by men.

In the permanent hospitals, on the other hand, he finds the field for women. Here he regards them as a necessity, where, as he puts it: "The sign posts point towards home and to recovery, rather than to the camp and the outpost. Here a trained woman is at her best, her order maintained, her methods undisturbed, the bugle is not a summons, and the discipline of a marching column is not at stake." The assignment of women to permanent posts or garrisons is also considered inexpedient and unnecessary, as introducing at once an added expense, and a considerably greater elaboration of the existing hospitals.

In concluding his paper Colonel Bache makes the following remarks:

"Of course the military future is inscrutable, and the memory for military and sanitary lessons is not retentive, but we may hope that should camps whiten our fields again, the preparation for war will precede its declaration, and that in this preparation will be included the fashioning of the hospital corps for its ultimate military purpose. This is not chiefly for the fragmentary work of a post, but for a larger unit of several activities, a division hospital, an ambulance company, interests in which the routine of a post is not concerned, and familiarity with which can only come from contact and training in some larger school. Our hospital men cannot, it is true, all be nurses, and we must remember in judging their work that the equivalent of the whole period of a soldier's enlistment is passed by women in their special schools of training; but better medical results in the field can be secured with due organization and steadiness than was done last summer without order and in a confusion of frenzy. It ought not to be possible to assemble again, even for the photographer, a hundred female nurses in a field hospital with troops. The sober employment of accredited women for our military needs, within the bounds indicated, is admirable, and now that we have passed beyond the noise of the captains, and may rest and think, I am quite sure that this sober thing will be done."

The foregoing is an expression of opinion from a man who has studied the situation in its various bearings, and as such must receive our deepest consideration.

CONGRÈS INTERNATIONAL ANTITABACIQUE.

It is probable that every phase of opinion will find an expression at the Paris Exposition. The antivaccinationists and the antivivisectionists will undoubtedly be there, demanding their small share of attention, and the innumerable vagaries to which modern free thought has brought us will assuredly each have its devoted and proselyting followers. For example, we hear that a conference is to be held by spiritualists, in which they hope to discuss their peculiar faith to the edification, no doubt, of themselves, and possibly of a few curiosity seekers.

We had, however, not expected that a congress confined to the discussion of the tobacco question would also find a place, and yet such seems to be the fact. We are in receipt of a circular and programme of the *Société contre l' abus du tabac*, which proposes to take the opportunity offered by the Exposition to organize an international congress, at which may be discussed in the most complete manner all the "humanitarian questions relative to tobacco." The programme as outlined gives one an idea of the thoroughness of the proposed discussion. The main headings are: historical and statistical inquiry, with the different methods of employing tobacco; chemical and physiological investigations on tobacco; pathology, and diseases caused by tobacco; the hygienic and social question; effects of instruction and education in combating the propagation of the habit; the moral and criminal aspects of the question.

Under these general headings is a large number of special questions for discussion, of a most comprehensive character. In fact, we should judge that every detail of the history of tobacco from its advent into

civilized life, was to be laid bare at this proposed Congress.

The idea is, however, a most commendable one, and we hope results of importance may be accomplished, and that all the evils as well as some of the benefits of the tobacco habit may be clearly brought to light.

TAKE NO THOUGHT FOR THE MORROW.

IN our edition of November 16th we commented editorially upon Professor Osler's advice to medical students, as expressed in his recent address at McGill University. The central idea of that advice, "Take no thought for the morrow," we ventured to suggest was a safe guide for the few, but not for the many, our meaning being that a certain consideration for the future need in nowise hamper the efforts of the present, and might, in fact, tend to lead to the more assiduous performance of the daily task. With Dr. Osler's letter, published in the issue of November 26th, we are in complete agreement. The determination to do the day's work well, to be entirely absorbed in it, and to put all the energy of one's nature into the task of the hour, is an absolute prerequisite to success in any walk of life, but still we think the morrow must always come in for its share of thought, small though it may often be. To our mind, the two attitudes are not antagonistic.

MEDICAL NOTES.

NERVE CELLS IN THE CEREBRAL CORTEX OF MAN. — The most recent estimate of the number of cortical nerve cells places it at 9 200,000,000, an estimate about eight times as large as that published by Meynert in 1872.

INSTRUCTION IN TROPICAL DISEASES AT JOHNS HOPKINS. — Instruction in tropical diseases has been begun at the Johns Hopkins Medical School, no doubt as one result of the commission recently sent to the Philippine Islands.

PLAGUE IN BRAZIL. — From October 22d to November 17th, 23 cases of plague have been reported at Santos, with 10 deaths. Two cases have also been reported from Sao Paulo during the month October 17th to November 17th.

FIRST WOMAN DOCTOR IN GERMANY. — Agnes Nacker is reported by the *Medical News* as the first woman doctor admitted to general practice in Germany. She resides in Berlin. It has taken the Prussian Cabinet two years to decide her case.

ANNUAL LECTURE. — The annual lecture of the Chicago Society of Internal Medicine, delivered by Dr. J. G. Adami, of Montreal, had for its subject, "Latent Infection and Sub-Infection, with Especial Reference to the Etiology of Pernicious Anemia."

A WARNING. — The *Cleveland Journal of Medicine* publishes in its issue of November the results of an investigation into the standing of an institution known as St Luke's Hospital, of Niles, Mich., which would appear to leave no doubt that this so-called hospital is run for purely mercenary motives, and that its promoters are wholly unscrupulous men, quite beyond the pale of medical ethics.

THE INSECT FAUNA OF HUMAN EXCREMENT. — At a recent meeting of the Biological Society of London, Dr. L. O. Howard gave the results of some recent investigations on the insect fauna of human excrement, suggested by the accounts of the transmission of typhoid germs by flies. Up to this time he has found 138 distinct species of insect in human excrement, and no doubt more are to come, for the investigation is to be continued.

ACTING ASSISTANT SURGEONS UNITED STATES ARMY. — A circular invitation has been sent to all the acting assistant surgeons of the United States Army engaged in the recent war with Spain (many of whom are still in the service) for a mass meeting to be held in the armory of the Seventh Regiment, N. Y. S. N. G., in New York December 5th next, for the purpose of effecting organization, and of securing legislation by Congress in their behalf. Much of the legislation sought was, it is said, matter of actual verbal agreement with them when their services were secured, and has, as required by good faith, already had the approval — by official communication to Congress — of the Secretary of War and the Surgeon-General of the Army, but has not become law.

BOSTON.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the six days ending at noon, November 28, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 76, scarlatina 21, measles 50, typhoid fever 10.

BOSTON SOCIETY OF MEDICAL SCIENCES. — At a meeting of the Society held November 1, 1899, the following communications were made: Dr. R. T. Edes spoke on "Temperature and Rhythm," showing the relationship between them in various types of animals; Mr. Ernest L. Walker read a paper on "A Comparative Study of the so-called Polychromatophilous Degeneration of the Red Blood Corpuscles in Anemic Conditions," and emphasized the importance to be attached to the condition from the standpoint of diagnosis. Dr. Charles H. Williams demonstrated a perimeter of elaborate design, from which it was claimed results of great accuracy could be obtained. Dr. Charles Minot spoke of the classification of tissues, as worked out by the embryologist, and urged the acceptance of this classification in other branches of medical work.

NEW YORK.

ST. VINCENT'S HOSPITAL JUBILEE. — On November 26th, 27th and 28th, St. Vincent's Hospital held a three days' celebration of its golden jubilee, the fiftieth anniversary of the founding of the institution. On Tuesday the Sisters of Charity had a special celebration in honor of the completion by one of their

number, Sister Antoinette, of fifty years' service in their order and in the hospital. St. Vincent's was established in 1849 under the auspices of Archbishop Hughes, whose sister, the Rev. Mother Angela, with four Sisters of Charity, assumed the management. At that time, it is said, the only two other hospitals in the city were the New York and Bellevue.

THE WOMAN'S HOSPITAL. — The forty-fourth anniversary of the Woman's Hospital was held on November 23d. The report of the Board of Directors showed that during the year there were treated 863 patients, of whom 267 were free, in the indoor department, and 4,172 in the outdoor department. Five thousand dollars was received respectively from Mrs Howard Gould and the estate of Angelina B. Crane for the endowment of free beds in perpetuity. It was announced that $200,000 of the $400,000 required for the new hospital was now assured, and that a home for nurses, a clinic and a dispensary building were promised by Mrs. Frederick F. Thompson as soon as the main building should be commenced.

THE "J. W. TAYLOR" CASES OF PLAGUE. — Dr. L'Hommedieu, one of the quarantine medical staff, has stated that there was at the quarantine laboratory an ample supply of bubonic plague serum, but it had not been necessary to use it in the *J. W. Taylor* cases, as the patients were convalescing when they arrived. There has been an unfortunate clash of authority between the State Quarantine Office and the United States Marine-Hospital Service in regard to the steamship *J. W. Taylor*, which brought the cases of plague.

COMMITTEE ON FOOD ADULTERATION. — The United States Senate Committee on Manufactures finished its investigation of food adulteration in New York on November 24th. In closing the investigation Senator Mason, the Chairman, stated that he thought the work of the committee would lead to such an establishment of public sentiment that a national law will be passed which will accomplish at least three things, namely: (1) Prohibit the importation into this country of articles manufactured abroad, the sale of which is prohibited in the country of manufacture. (2) Prohibit the use of deleterious adulterants. (3) When adulterants are used to cheapen, which results in deceiving the purchaser, the law will go as far as possible to compel the manufacturer and dealer to mark the package for what it actually is.

SALE OF POISONS. — The Druggists' League for Shorter Hours, in a circular just issued, announces its intention to co-operate with the Board of Health in an attempt to stop the careless sale of poisons, particularly of carbolic acid. It declares that responsibility for the non-enforcement of laws against the sale of poisons should rest with the Board of Pharmacy, and complaint is also made of the lax enforcement of other pharmaceutical laws. In commenting on the frequency of suicides by carbolic acid the circular calls attention to the use of alcohol as an antidote for this poison, as claimed by Dr. J. Austin Kelly, of Brooklyn. "Dr. Kelly," it states, "has proved by personal experiments, as well as by treatment of patients, that alcohol is a perfect antidote for carbolic acid. He says that in all cases where poisoning by carbolic acid has occurred four times the amount of whiskey should be given at the earliest moment in case pure alcohol should not be on hand. In the absence of either alcohol or whiskey, five times the quantity of ordinary table vinegar should be given. No oil of any kind should be administered. Thus treated early enough, all cases will recover." It is to be feared that the general announcement of this antidote may tend rather to the increased use of carbolic acid than to its abandonment.

VERDICT FOR DAMAGES. — Grace McDonald, a girl seven years old, who lost both her legs by being run over by a street car, has been awarded $15,000 damages against the Brooklyn Heights Railroad Company.

Miscellany.

THE "INDEX MEDICUS NOVUS."

THE following circular received from the "redaktion" of the *Index Medicus Novus*, published in Vienna, I. Tuchlauben 23, is certainly a "curiosity of English literature":

P. T.

The necessity to have an organ of information of the whole medical literature of world is wellknowne percieved by all investigators and practioners all days more and more. Such work demands extreemely much toil, time and expenses, for there must be gathered the whole medical journal-literature of every country and even in all languishes, to give all times an resumption quite complete of the whole medical literature.

Through the persuasion of prominent authorities and by cooperation of professioners, we resolved, to satisfy this pressing whishes, to produce such an underprize and so we founded the "Index Medicus Novus."— We must say that the sacrifices which are necessary to the work in each regard are more important as we thought in the beginn; but we will continue now the undertaken work because there is no doubt, that the whole medical world will have the greatest interest of it. Next time we will give also a specification of all medical-scientific-books coming just out, as all medical dissertations of the universities quite regular; so the "Index Medicus Novus" will become a collection for consultation quite unsurpassed and as theer has been nothing likewise before it in the medical knowledge science.

To have an easy and quiekly review of the great deal of the stuff we fixed to publish the "Index Medicus Novus" twice mouthly to the 1. and 15., in mind to publish the literature of world who appeared in this short time as soon and complete as possible. Than we tryed to comprise the special compartments to have an easy review and we observe, that the division "Naturalia" shows those essays which are composed by graduated phi-icians or for the least acts of scientific, clinical questions and in the "Academia" those re-

cipients, which are discussed in the sessions of the academies of sciences on the jurisdiction for medical investigation. Those last-named very important essays have been till now generally quite — unknown to the broader medical circles, because they are only published in the academical publications.

Though all this performances we set the price for subscribition very low, to make it possible to each scientific searcher to buy the "Index Medicus Novus." So we hope confidently that the interested circles well assist (to this undertakement quite as important than scientific and exertions) by her participation and furtherance. We will not omit to say that our bureau translates in all languishes each essay wished by anyone.

This number appears exeptionally as a double-number.

We the honour to send you the "Index Medicus Novus" and you can have, if you like it, still the numbers of the first quarter of the year.

Saying that we will try to follow willingly to the wishes and incitations of learned-mans with great veneration

the Redaction of

"INDEX MEDICUS NOVUS."

STARVATION IN LONDON.

LONDON, says the *Medical Record*, although the richest city in the world, supplies quite her fair share of deaths due to starvation. It is gathered from a parliamentary return recently issued with respect to the number of deaths in London from starvation, or accelerated by privation, that the total number of such cases was 48. In the Eastern District there were 15 deaths from this cause, in the Northeastern 13. These, by the way, are only the cases of death from unexplained causes which came before a coroner. Doubtless there are many others which are never known.

BEER DRINKING.

RECENT statistics show that the consumption of beer in Germany during the year 1897-98 was 1,383,700,000 gallons; 1,192,000,000 in Great Britain; 180,000,000 in France, and about 90,000,000 in Russia. A better notion of the popularity of beer as a beverage is to be had from the estimates of consumption "per head" of the population. It is reckoned at 36 gallons in Belgium, 32 in Great Britain, 25 in Germany, 21 in Denmark, 12 in Switzerland, 10 in the United States, 9½ in Austria-Hungary, 9 in Holland, 5 in France, 3½ in Norway, 2½ in Sweden, and 1 in Russia. — *Medical Record.*

THE CONTAGIOUSNESS OF LEPROSY.

IN a recent clinical lecture on "Leprosy and Cancer of the Skin," delivered at the London (Eng.) Hospital, Jonathan Hutchinson made the following remarks:

"As for the fear of contagion in leprosy, I regard it as utterly unfounded. We have abundant evidence to prove that those living in daily and hourly contact with leprous members of their own families contract the disease only in the rarest instances. The spread of leprosy by direct personal contagion is a contingency which must be counted as merely a remotely possible accident. Cases occurring in the same household or village are much more probably due to identical food and surroundings than to any form of direct infection. Isolation is cruel, a fearful waste of labor, and leaves the real cause of the disease entirely untouched. It has never checked or limited the spread of the disease in the slightest degree."

LOSS OF KNEE-JERKS IN GROSS LESIONS OF THE PREFRONTAL REGION OF THE BRAIN.

THE importance of the knee-jerk in the diagnosis of lesions of the nervous system is so important, that its absence under unusual conditions should be most carefully noted. Dr. R. T. Williamson, of Manchester, Eng., contributes a short paper to the *Glasgow Medical Journal* for November, 1899, which we quote in part:

"The object of my note is to draw attention to the fact that, in tumor and abscess of another region of the brain — the *prefrontal region* — the knee-jerks are sometimes lost, just as in cerebellar tumor. In such case, there is usually nothing to account for the loss of the knee-jerks, except the lesion of the prefrontal region. The knee-jerks were lost in *three* out of *five* cases of tumor or abscess of the prefrontal region which I recorded in 1896.

"The first case was one of sarcoma of both prefrontal regions. I examined the knee-jerks almost every day for four weeks, but always found them absent. The tumor growths were limited to the prefrontal regions, whilst the ascending frontal convolutions and the motor area of the cortex, the motor fibres in the white matter and the basal ganglia were not invaded by the growth. The cerebellum, medulla and pons were also normal. There were no symptoms of spinal cord lesion during life, but in order to be sure that no spinal pathological changes were present, I examined the spinal cord carefully. Both macroscopically and microscopically it was normal.

"The second case was one of abscess of the right prefrontal region. The knee-jerks were both absent. There were no symptoms indicating any lesion of the spinal cord, and also there was no brain lesion, except the abscess in the prefrontal region.

"In the third case the knee-jerks were absent, and *post-mortem* a tumor was found limited to the right prefrontal region. Other parts of the cerebrum and cerebellum were normal.

"In the paper referred to I analyzed the condition of the knee-jerks in 50 cases of prefrontal tumor or abscess (45 from medical literature and 5 recorded by myself). In 20 of these cases the knee-jerks were not mentioned; in the other 30 cases the condition was as follows: Knee-jerk absent on both sides, in 6 cases; knee-jerk very feeble on both sides, in 2 cases; knee-jerks normal or increased, in 16 cases; knee-jerk very feeble on side opposite to tumor, in 4 cases; knee-jerk very feeble on side of the tumor, in 2 cases. The knee-jerks were both absent, therefore, in 6 out of 30 cases of tumor or abscess of prefrontal region (verified by *post-mortem* examination) — that is, in 20 per cent. of the cases. In all of the cases in which the knee-jerks were absent there was no

indication of lesion of the spinal cord or peripheral nerves; but in only one of the cases (the first which I have recorded) was the absence of microscopical changes in the spinal cord shown by pathological examination. In tumor growths involving the motor region of the brain, the knee-jerk on the side opposite to the lesion is generally increased, and on the side of the lesion normal or increased. In 30 cases of tumor of the motor area of the brain (taken for comparison with the 30 cases of gross lesion of the prefrontal region analyzed above) the knee-jerks were both present in all except one, and in this case the growth was very extensive, and had invaded the basal ganglia.

"In a case of tumor of the second left frontal convolution, recently recorded by Dr. Gordinier, it is stated that "the most careful reinforcement failed to elicit the presence of patellar tendon reflexes." Yet at this time there was no other affection of the legs. The autopsy revealed nothing to account for the loss of the knee-jerks except the prefrontal tumor.

"Apparently in tumor or abscess, in two regions of the brain especially — the *cerebellum* and the *prefrontal* region — the knee-jerks are sometimes both absent; whilst in tumor or abscess in other parts of the brain loss of the knee-jerks is exceedingly rare."

Correspondence.

ADVERTISING, OR BEING ADVERTISED.

At the request of the participant most concerned we give space to the following correspondence. We regret to acknowledge that there are members of the profession, we hope not many, who experience the fate which has befallen Dr. Phelps not unwillingly; there are some who even court such martyrdom, but most sufferers are, we are glad to think, unwilling victims and are as helpless as they are indignant.

New York, November 20, 1899.

Mr. Editor: — Will you kindly give space to the enclosed letter in justice to myself and many others who have suffered through the lay press.

Very sincerely yours,
A. M. Phelps, M.D.

Chicago, November 14, 1899.

My Dear Dr. Phelps: — Your advertisement in the *Chicago Daily News* of Nov. 9th has been called to my attention. Why don't you advertise in your own local papers? I should think it would pay better, and it would certainly be less objectionable to some of your friends.

Yours truly,
——— M.D.,
Secretary.

New York, November 17, 1899.

——— M.D.

My Dear Doctor, — I enclose you a reprint of an article which I wrote for a reputable medical journal. In that article I mentioned different remedies which I used in the treatment of certain joint affections. The drug people who happened to be interested in a certain remedy mentioned had one hundred and twenty thousand (120,000) reprints made and sent them to the profession over my signature. I could find no fault if they had not black-lined the margin of the page where the remedy is alluded to. It cost me six hundred dollars to fight the thing to prevent them from using the article, and I was beaten on the grounds that I had not copyrighted it. This reprint has damaged me thousands of dollars and I have no redress.

Other articles of mine have been used in a similar manner, and I have seen articles from the pens of eminent men, and I think from yours, handled in a similar manner. I know of no way to prevent it. Certainly the courts cannot or will not. I have had an experience with them and know.

Now, in regard to newspaper articles, and I presume your letter alludes to one, I have this to say: that newspapers as a matter of business, I am informed, employ doctors as reporters, who write on medical topics for so much a line. Our clinics are largely public in every teaching institution, but even if they were private or open only to students or matriculates, who would have the audacity to exclude a physician presenting his card at the door, unless he knew him to be a reporter? Clinics are posted on the bulletin boards of hospitals, colleges, and also of the Academy of Medicine of this city. When this is done, not only the profession but any layman can obtain a knowledge of the work done in the several clinics a day in advance. The reporter is hired by the papers to keep posted on these announcements and report to the papers such work as he thinks would be of interest to its readers. And then the medical libraries are accessible to him. He writes his articles for so much a line, and the paper prints it to increase its circulation. Can you tell me how to prevent it? I think you cannot.

Scarcely a day passes that I do not see in the lay papers a report of some clinic, important or unimportant, and the name of the surgeon who conducted it mentioned. I always feel sorry for the surgeon. I will tell you why. There are those in the profession who would believe that these men were party to the article, but with an occasional exception, I know to the contrary. And then again medical students often pay their way through college by reporting to the papers interesting clinics. The teacher cannot possibly know of this, because the student is sharp enough to keep his own counsel to save himself from expulsion. One student, after he had been graduated, told me he made eight hundred dollars reporting clinics to the lay press, both to the syndicates and the Associated Press, and many others have given me similar information. Teachers in public clinics are the most frequent victims.

Every surgeon or specialist depends upon the profession, and not the people, for his patients. Nine patients out of every ten who come to the specialist or surgeon are sent by physicians. Now, understanding this, and knowing that the profession stamps as dishonorable and contemptible newspaper advertising which leads to notoriety and not reputation, and knowing that physicians would ostracise such a surgeon or specialist and send their patients elsewhere — do you believe, or any other member of the profession, that a specialist would, if he could prevent it, allow any allusion to his work in the lay press? Understanding this question as I do, I cannot believe you do. Every article that ever appeared has injured the surgeon or specialist incalculably. If I had a hated enemy, which I hope I have not, and I wished to ruin him professionally and financially, I know of no way so safe or so speedy as to hire a space-writer to report his clinic, and, if possible, his private operations, to the lay press once or twice a week. In less than six months the profession to a man would ostracise him.

A few years ago the newspapers followed a case of mine in the City Hospital for three months with daily fake reports, in spite of my strenuous efforts and those of the hospital and my friends to suppress it. It almost ruined me professionally and financially; a lucrative practice was almost wholly destroyed.

No! The specialist whose clinics and name appear in the daily lay print is to be pitied by his fellow practitioners, not censured. I have had the bitter experience and I know what it costs.

I am, dear Doctor,
Very truly yours,
A. M. Phelps, M.D.

METEOROLOGICAL RECORD

For the week ending November 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...12	29.97	32	36	27	93	72	84	N.W.	N.W.	12	22	N.	C.	.51
M..13	30.26	33	41	25	73	58	66	N.W.	N.W.	16	11	C.	F.	
T...14	30.32	34	41	27	70	75	72	N.W.	S.E.	6	2	C.	O.	
W..15	30.07	40	48	33	89	100	94	E.	W.	5	11	O.	O.	.01
T...16	30.25	43	50	36	85	76	80	N.W.	N.	14	9	C.	O.	
F...17	30.50	34	37	30	79	86	82	N.	N.E.	8	5	F.	C.	
S...18	30.21	40	50	29	82	82	82	S.	S.W.	9	9	F.	O.	
☞	30.23		43	29			80							.56

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 18, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,350,053	1189	389	9.92	17.52	.88	1.76	4.40
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	201	58	8.33	17.15	.49	1.96	3.92
Baltimore	506,389	165	41	12.60	10.80	3.60	4.80	4.20
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	95	32	18 02	5.30	5.30	6.36	4.24
Washington	277,000	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	47	16	12.78	2.13	10.65	—	2.13
Nashville	87,754	68	23	13.23	11.76	7 35	—	1.47
Charleston	65,165	—	—	—	—	—	—	—
Worcester	111,732	29	9	17.25	17.25	—	3.45	6.90
Fall River	103,142	—	—	—	—	—	—	—
Cambridge	92,820	23	13	8.70	30.45	4.35	—	—
Lowell	90,114	32	13	3.13	9.39	—	3.13	—
New Bedford	70,514	14	3	7.14	7.14	—	7.14	—
Lynn	68,218	20	3	5.00	—	—	5.00	—
Somerville	64,394	6	2	33.33	33.33	—	16.66	—
Lawrence	59,072	16	10	25.00	6.25	6.25	—	12.50
Springfield	58,266	19	9	36.82	5.26	—	10.52	10.52
Holyoke	44,510	6	3	—	—	—	—	—
Brockton	38,759	7	2	—	—	—	—	—
Salem	37,723	8	4	—	25.00	—	—	—
Malden	36,421	5	2	20.00	20.00	—	—	20.00
Chelsea	34,235	10	2	—	—	—	—	—
Haverhill	32,651	12	3	16.66	8.33	—	—	16.66
Gloucester	29,626	7	—	—	—	—	—	—
Fitchburg	30,523	6	2	16.66	16.66	—	—	—
Newton	30,461	7	—	—	—	—	—	—
Taunton	28,527	6	1	—	—	—	—	—
Everett	28,102	6	3	16.66	16.66	—	—	16.66
Quincy	24,578	3	1	—	33.33	—	—	—
Pittsfield	23,421	4	1	25 00	—	—	—	—
Waltham	22,791	3	—	—	—	—	—	—
North Adams	21,583	2	1	50.00	—	—	—	50.00
Chicopee	18,316	6	1	16.66	—	—	16.66	—
Medford	17,190	5	1	—	—	—	—	—
Newburyport	15,636	6	1	—	16.66	—	—	—
Melrose	14,721	4	1	75.00	—	—	25.00	—

Deaths reported 2,045; under five years of age 651; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 213, acute lung diseases 315, consumption 221, diphtheria and croup 87, typhoid fever 49, diarrheal diseases 35, whooping-cough 17, scarlet fever 13, measles 13, cerebro-spinal meningitis 7, erysipelas 5.

From whooping-cough New York 10, Nashville 3, Boston, Pittsburg, Springfield and North Adams 1 each. From scarlet fever New York 10, Pittsburg, Pittsfield and Melrose 1 each. From measles New York 12, Springfield and Melrose 1 each. From cerebro-spinal meningitis New York and Boston 2 each, Worcester, Somerville and Lawrence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending November 11th, the death-rate was 18.0. Deaths reported 3,936: acute diseases of the respiratory organs (London) 325, diphtheria 135, measles 105, fever 97, diarrhea 44, whooping-cough 41, scarlet fever 29, small-pox 2.

The death-rates ranged from 10.2 in Croydon to 25.1 in Liverpool: Birmingham 19.4, Bradford 16.8, Gateshead 15.7, Hull 16.7, Leeds 20.2, London 17.3, Manchester 16.9, Newcastle-on-Tyne 16.6, Nottingham 18.3, Sheffield 16.5, Sunderland 18.6, West Ham 14.1, Wolverhampton 20.0.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 4th, at 8 o'clock.

Subject: "Heredity."

Papers: C. S. Minot, LL.D., "Science and Heredity."

Dr. Robert Macdougall, Ph.D.: "Psychology and Heredity."

Election of members.

A. K. STONE, M.D., *Secretary*, 637 Boylston St.

SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, December 6, 1899, at 8.15 o'clock.

Paper: "The Open Treatment of Fractures," by Dr. C. L. Scudder. Discussion by Drs. C. B. Porter, G. W. Gay, J. C. Warren and Paul Thorndike.

F. G. BALCH, M.D., *Secretary*, 279 Clarendon St.

SEVENTH INTERNATIONAL OTOLOGICAL CONGRESS. — Owing to the date for holding the International Medical Congress falling in 1903, it has been decided that the next International Otological Congress shall not take place in that year, but in 1902. The meeting will be held at Bordeaux, under the presidency of Dr. Mowee.

RECENT DEATH.

JOSEPH G. WALLACH, M.D., of New York, died on November 21st, at the age of forty-four years. He was a native of New York City and was graduated from Bellevue Hospital Medical College in 1877.

BOOKS AND PAMPHLETS RECEIVED.

A Test Case for Taste. By Nathan T. Beers, Jr., M.D., Brooklyn. Reprint. 1899.

Anent an Urgent Duty of the Profession. By B. Oettinger, M.D., Denver. 1899.

Spencer's Disease: Dermatitis Multiformis Exfoliativa. By Walter Spencer, M.D. 1899.

Transactions of the Maine Medical Association, 1899. Vol. XIII, Part II. Portland, 1899.

Some Notes upon the Tuberculin Test. By Edward O. Otis, M.D., Boston. Reprint. 1899.

Cystoid Disease of the Testicle: Teratoma Testis? By F. R. Sturgis, M.D., New York. Reprint. 1899.

Five Hundred and Fifty Surgical Operations without Alcohol. By Chas. Gilbert Davis, M.D., Chicago. Reprint. 1899.

Accessory Thyroid Tumors at Base of Tongue; Report of Cases. By Jacob E. Schadle, M.D., St. Paul, Minn. Reprint. 1899.

Sinus Thrombosis; Cure without Opening the Sinus. Prognosis of Laryngeal Tuberculosis. By Robert Levy, M.D., Denver, Colo. Reprints. 1899.

The Propagation of Diseases by Means of Insects, with Special Consideration of the Common Domestic Types. Address in Hygiene. By W. M. L. Coplin, M.D. Reprint. 1899.

Akromegaly: With Report of a Case Presenting Some Unusual Features; Height of Patient, Eight Feet and Six Inches. By William Nicholas Lackey, M.D., Gallatin, Tenn. Reprint. 1899.

The Tuberculosis Crusade and Its Problems. Traction Plasters for Temporarily Contracting an Affected Lung, in Lieu of the Murphy Operation. By Charles Denison, A.M., M.D., Denver. 1899.

The Milk-Supply of Cities: Can it be Improved? The Reconstruction of the Pelvic Structures Incident to Lesions of Perineum. By Henry O. Marcy, A.M., M.D., LL.D., Boston. Reprints. 1898-99.

Position in Sleep: A Principle in Neurologic Therapy. Medical Libraries. A Case of Family Susceptibility to Facial Paralysis. Isolated Finger Paralysis. By William Browning, M.D., Brooklyn, N. Y. Reprints. 1899.

Original Articles.

TUMOR OF THE PITUITARY BODY.

BY G. L. WALTON, M.D.,
Clinical Instructor in Neurology, Harvard University; Physician to Neurological Department, Massachusetts General Hospital,

AND F. E. CHENEY, M.D.,
Assistant in Ophthalmology, Harvard University; Surgeon to Massachusetts Charitable Eye and Ear Infirmary; Ophthalmic Surgeon to Out-patient Department, Massachusetts General Hospital.

PATHOLOGICAL REPORT BY F. B. MALLORY, M.D.,
Assistant Professor of Pathology, Harvard University.

TUMORS of the hypophysis have acquired a new interest since Marie's demonstration of acromegaly a little over a decade ago. The statement made by Rath[1] in 1888, that the function of this organ was unknown, would not be generally accepted to-day, and of late the indirect results of pituitary tumors, through pressure and involvement of adjacent structures, have taken a position of secondary interest as compared with symptoms attributable to disturbance of glandular activity.

The hypophysis, or pituitary body, an organ averaging about half an inch in its anteroposterior diameter, and quarter of an inch transversely, lies in the sella turcica, invested in a fibrous sheath derived from the dura mater, a layer of which (tentorium sellæ turcicæ) roofs over and separates it from the intracranial contents; the infundibulum passes through an opening in this membrane.

The hypophysis consists of two distinct bodies separated only by a fibrous lamina. These two bodies are distinct in structure and function. The posterior lobe represents an outgrowth of the embryonic brain, atrophied in man, and subserving no known nervous function. The chief interest centres in the anterior lobe, which is practically a ductless gland developed from the ectoderm of the buccal cavity. This gland, like others of its class, plays an important part in the economy; its secretion (absorbed by the lymphatics, since in man the duct has disappeared) undoubtedly plays an important part in the nutrition and growth of the body. The exact action of such secretions on the central nervous system is a matter of speculation; Collins[2] alludes to that of the pituitary gland as either neutralizing waste products, or serving as a trophic agent. Gigantism, acromegaly and allied states seem to stand in a certain relation to disorders of the pituitary gland, though evidence of this relation has by no means proved constant. As Starr puts it, it is not true that a tumor of this organ always produces symptoms of acromegaly, and, conversely, the autopsy does not always show change in the pituitary body in acromegaly.

Few authorities now deny, however, that a relation exists between disease of the pituitary gland and acromegaly, a disease characterized by mental apathy, enlargement of hands, feet and face, vasomotor symptoms, together with loss of sexual power, general weakness, and other signs of perverted growth and disordered nervous function. Arguments are still adduced to show that the diseased gland represents a result rather than the cause of the general perversion of function, but the weight of evidence is in the opposite direction.

The interest in a case of tumor of the pituitary body is now threefold: first, in its bearing upon the anatomy of the chiasm and optic tract, as shown by the various restrictions of the visual field; second, in its symptomatology, as bearing upon early diagnosis; and, third, in its pathology, more particularly with reference to the disturbance of the glandular function.

Vision. — The situation of the gland is such that the optic chiasm is the first important body to be affected by its pressure. The tumor may extend upward either in front of the chiasm or behind it, or both; amblyopia and various forms of visual field restriction follow. Both temporal fields are often lost through pressure upon the chiasm anteriorly; sometimes one eye is completely blind, while the other shows loss of temporal field. In a case recently reported by Leszynsky there was complete temporal hemianopsia in one eye and temporal hemiachromatopsia in the other. Not uncommonly one field is more contracted than the other. Homonomous hemianopsia is sometimes found (as in our case, at a later stage), showing pressure on the optic tract behind the chiasm.

Symptomatology. — The *résumé* of Rath covers this ground, apart from the functions of the gland itself. The symptoms in the order of their frequency and importance are: (1) Headache, generally frontal and temporal; (2) vomiting; (3) vertigo; (4) disturbance of motion, spastic and paretic (pressure on the crura cerebri); (5) disturbance of speech; (6) disordered pupils (mydriasis, myosis, loss of reaction, inequality); (7) paralysis of ocular muscles; (8) diabetes mellitus and insipidus. To these symptoms must now be added those of acromegaly, namely, abnormal development of the hands and feet, large features and prominent brows, large jaws, with separation of teeth, broad nose, thick and long lips, large tongue, thick mucous membranes, doughy tissues, loss of sexual power, weakness and paresthesia.

It must be remembered that these changes are less marked when the disorder appears in adult life after the growth of the patient is established. The fact must also be borne in mind that many persons have some or all of these peculiarities of growth without being deemed abnormal. With regard to such individuals it is worthy of note that Pechkranz[3] reports a case of fatal tumor of the hypophysis occurring in a man who showed from youth certain peculiarities of growth and nutrition (hyperplasia of genitals, feminine build of osseous system, etc.). These peculiarities he attributed to congenital anomalous structure of the pituitary body, this anomalous structure forming the basis for the new growth. Of this view our case affords a striking corroboration, as will be seen in the report appended.

Pathology. — The commonest form of new growth appears to partake of the nature of sarcomata or adenomata — tumors rich in cells and vessels. In some cases the gradual passage from gland tissue to irregularly placed cells renders the diagnosis between adenoma and sarcoma difficult, with strong suggestion of adenoma, as illustrated by the case of Hippel,[4] who asserts that all these new growths start from the anterior lobe.

Burr and Riesmann,[5] in a recent communication,

[1] Rath: Ophthalmologische Archiv, Bd. XXXIV, Heft 4.
[2] Nervous Diseases, by American Authors, 1895, p. 893.
[3] Neurolog. Centralbl., 1 März, 15 März, 1899.
[4] Virch. Arch. f. path. Anat. u. Path., 1891., Bd. CXXVI.
[5] Journal of Nervous and Mental Diseases, January, 1899.

have called attention to a probable source of fallacy on the part of those who argue that tumors of the hypophysis without acromegaly negative the implication of this organ in that disease. These writers argue that a very small portion of a ductless gland suffices to perform its function; in evidence they adduce the fact that removal of half of the thyroid gland fails to produce myxedema. In support of their view they report a case of pituitary tumor without signs of acromegaly, careful examination of the tumor showing that a very considerable portion of the glandular structure was intact. Dr. Mallory's findings in our case tend to corroborate this view, for he reports that beyond question a certain part of the pituitary body is present.

The question has not been determined whether the secretion is analogous to that of the thyroid gland, in that by destroying toxins, or otherwise, it checks overgrowth of tissue, or whether, on the other hand, the secretion is itself an irritant acting as a stimulus to growth. The arguments adduced by Brooks[6] in favor of the latter supposition seem on the whole most convincing, namely, (1) that the pituitary gland has been often completely destroyed without signs of acromegaly; (2) removal of the pituitary body in lower animals does not produce acromegaly; (3) feeding with pituitary extract has no effect upon the disease.

Brooks allows that sarcoma predominates over adenoma in post-mortem reports, but calls attention to the fact that individual observers may be mistaken in the nature of these growths, as he had been himself in his early cases.

Before leaving the question of pathology, it is important to note that optic neuritis is rare, but optic atrophy common. The absence of optic neuritis has been explained by the fact that the tumor, before it has reached great proportions, is separated from the cranial cavity by the tentorium sellæ turcicæ (Pechkranz). Again, when the tumor has become extensive, it shuts off the cerebro-spinal fluid from the sheath of the nerve by pressure (Hippel). In the case of Johnston and Morro[7] neuritis appeared in one eye and atrophy in the other. Our case comes within the usual rule, in that optic atrophy, without neuritis, was present. This point affords an important aid in diagnosis, for, given general symptoms of tumor of the brain with optic atrophy, attention is at once directed to the hypophysis; if, in addition, loss of temporal fields appear, the diagnosis is made probable.

Dr. G. C. D., a man of exceptional physical vigor, of even disposition, and of mental acquirements giving great promise of success in his chosen field, first consulted Dr. Cheney, July 20, 1895, in regard to his eyes. (He was at that time house officer in the Massachusetts General Hospital, age twenty-six.) His family and previous history were good, with the exception of occasional headaches dating from early life; these headaches were of the nature of migraine and were accompanied by temporary loss of vision on one side (hemianopsia). He was operated on for spina bifida in early infancy. He was a large man with rather heavy gait, with large extremities and features, including broad nose, large mouth, very thick lips. The tongue was large, the jaws large, the teeth separated. The beard was scant, though he had a fair moustache; the hair was dry and crisp. These peculiarities were not sufficiently noticeable to suggest abnormality, but are mentioned in view of their possible connection with congenital defect in structure of the gland which proved later to be the seat of disease. There was no enlargement of thyroid. He complained to Dr. Cheney of asthenopia, a slight blur in reading, and occasional headaches. The headaches were no more severe than he had been subject to for a number of years.

An examination under homatropine gave the following result: v. o. d. with $+ 0.50 = + 0.50$ cyl. axis $100° = 0.7$, and v. o. s. with $+ 0.50 = + 0.50$ cyl. axis $100° = 1$. There were floating opacities in the vitreous of both eyes, considerably more in the right. Fundus examination negative; glasses correcting the astigmatism were prescribed for constant use. He was seen frequently during the fall and early winter, complaining of various slight asthenopic symptoms. There was some variation in vision from time to time, but there was no falling off appreciable to the patient. On January 21, 1895, with correcting glasses v. o. d. $= 0.6$; v. o. s. $= 1$. With the exception of this slight decrease in sight, and the floating opacities in the vitreous, there was nothing to suggest ocular or general disease.

He was not seen again until April 15, 1896. For some little time he had noticed that people approaching from the left were not seen as readily as those coming from the right, and quite recently everything had looked black and blotted out on the left side of the visual field. There was little or no headache; he felt perfectly well and looked the picture of health. On testing the fields of vision there was found complete left hemianopsia in the left eye for white and colors, the line of demarcation being unusually well defined. He was still able, however, over the central and upper portion of the left field, to distinguish faintly the movements of the hand. The right half of the field was normal for form and color, and the central vision was normal for distance and near point. The field of vision of the right eye was perfectly normal for form and color. The central vision, however, had fallen off to five-tenths and was also defective for near. In June, 1896, Dr. Wadsworth saw the case in consultation and expressed the opinion that both discs were slightly atrophic. Dr. Walton saw him in May, 1896, and at intervals afterwards.

An exhaustive examination from the neurological point of view, October 20, 1896, revealed no disturbance of motion, nutrition, sensation or reflexes, superficial or deep; in fact, the physical examination was absolutely negative except for the pallor of optic discs and loss of visual acuity and field. The only complaint was poor vision and impaired virility, a symptom which attracted no attention at that time, though in strong contrast to his general vigor. In view of the later history it was really of considerable import and should, perhaps, have been more taken seriously into account. The urine was examined a number of times during the summer and fall of 1896, the only result being a well-marked trace of arsenic.

He was attended throughout his illness (except while under the care of Dr. Dennett at Arlington) by his colleague, Dr. Painter, whose records we have utilized in reporting the progress of the case.

[6] Harlow Brooks: Archives for Neurology and Psychopathology, 1898, vol. 1, No. 4.

[7] Glasgow Medical Journal, August, 1898.

The patient began practice in May, 1896, and in the following June took charge of a case which kept him out of town till the 22d of August. During this time he was perfectly well, and though his eyes disturbed him, he succeeded in winning the final prize in two or three golf tournaments. He had to depend upon the caddy to follow the ball, though he had no difficulty in making the stroke. After being at home about two weeks he went away with another patient and did not return till just before his marriage, which took place in September. At this time he reported that there had been a considerable decrease in the vision of both eyes, and he had considerable difficulty in reading. He appeared in excellent condition, had gained in flesh, and felt well physically and mentally. Dr. Cheney's examination at this time showed v. o. d. $= 0.2$; v. o. s. $= 0.5$. The fields of vision were unchanged. The right disc was somewhat grayish in tint. On November 12, 1896, v. o. d. $= \frac{3}{10}$; v. o. s. $= \frac{7}{10}$. The fields of vision taken eight days later showed no contraction for form or color in the right eye, and the hemianopic field of the left was practically the same as on previous examination. Both discs were noticeably atrophic in appearance. During the fall and early winter he had an occasional mild headache, not accompanied by nausea or vomiting. In November it was noticed that he was apt to doze off and to sleep unduly. Instead of being ambitious and anxious to do for others, he required constant stimulus even in routine work. His apathy steadily increased. In December, 1896, and in January, 1897, he was distinctly brighter and showed more interest in his work. In January, 1897, Dr. Derby saw the case in consultation, and from this time on the ocular condition was under the observation of both Drs. Derby and Cheney. Headache during the latter part of this time became more frequent and occasionally accompanied by nausea. In the latter part of February he became drowsy and apathetic. Visual examination showed decrease in the right eye to $\frac{2}{200}$, in the left to $\frac{7}{10}$. His weight, which had reached two hundred and sixteen pounds in January, decreased slightly, and his color became poor, his lips particularly showing a waxen pallor. Headaches occurred every three weeks till midsummer, 1897. He grew weaker, finding it difficult to lift the heavy window sashes. His speech also showed less fluency. There was no hesitation for words but they were enunciated slowly. His appetite became very capricious. No diminution was noted in other special senses. His gait was slow and dragging. The features became gradually more heavy and expressionless and the dryness of the hair increased.

His interest lagged even in matters pertaining to his profession. In the early part of the spring, while away with a patient, he attempted to perform transfusion, and experienced great difficulty in finding the vein. Muscular weakness, somnolence, and lack of interest increased. An examination of vision made by Dr. Derby in June showed improvement in the right eye to $\frac{4}{60}$ and the left to $\frac{4}{10}$. During a remission he amputated a breast, obviously handicapped by poor vision. Finding the same difficulty in another operation he abandoned general surgical work. During June and July, he showed evident signs of exhaustion. His appetite was poor, he had lost a number of pounds in weight, his muscular strength was at a very low ebb, and he was somnolent much of the time.

Examination by Dr. Derby in June showed left homonomous hemianopsia, and an examination by Dr. Walton in September showed, in addition, loss of color sense in the otherwise normal half field of the right eye. At the examination in September he had lost thirty-four pounds, weakness was marked, speech was slow, and he seemed quite sluggish in grasping directions, for example, in the use of the perimeter, though his answers regarding the vision were definite and constant in several trials. The absence of color fields in the right eye and the normal boundaries of the color fields in the left eye were established with special care by repeated tests. Five days later he had a sudden attack of numbness and prickling in the left arm and left side of the face and tongue, of short duration.

The 1st of October he was persuaded to give up his work. After going into the country he apparently improved for a time. Since July his headaches had come at rather shorter intervals, and the frequency of the nausea had also increased.

After an interval of comparative comfort and enjoyment he was confined to his bed by a severe headache with extreme prostration, and after a period of somnolence, died December 29, 1897.

PATHOLOGICAL REPORT BY DR. F. B. MALLORY.

The sella turcica is involved by a discrete, lobulated, encapsulated tumor measuring 2.7 centimetres from front to back, 3.5 centimetres in width, and three centimetres in vertical diameter. The tumor has led to the disappearance of the olivary process, and of the base and posterior portions of the sella turcica. On section of the growth, after fixation in formaldehyde, the growth appears soft and granular; for the most part dark grayish in color, but in the posterior half there is a whitish area and also several translucent light grayish masses resembling cartilage but softer. Two or three septa extend part way in from the fibrous capsule and to some extent divide up the growth.

Microscopic examination shows the growth to consist mainly of delicate blood-vessels surrounded by walls of round cells, which are, for the most part, epitheloid in type. The vessels can be teased out readily, like the tubules of a testicle. The transparent areas resembling in gross hyaline cartilage consist of masses of colloid material. The darker areas in the growth are due to hemorrhage. Along one of the septa of fibrous tissue is an area which presents a different appearance from the rest of the growth. It consists of narrow compressed tubules, some of the cells of which tend to take on eosin stain, as do many of the cells in the anterior portion of the normal pituitary body after fixation in Zenker's fluid. A number of these tubules are dilated and contain colloid material. This area is probably the remains of the anterior part of the pituitary body.

Diagnosis. — *Perithelial angiosarcoma* (endotheliomа).

To summarize the case, we have a patient with peculiarities of growth suggestive of congenital defect of the pituitary gland. Attacks of migraine accompanied by hemianopsia had existed so long as to at first exclude an organic basis. Later, we find a persistent defective field involving primarily the temporal field of one eye only; later, an extension to the nasal field of the other eye, producing homonomous hemianopsia; still further we have a loss of color field

on the otherwise unaffected side of one eye (hemiachromatopsia). During the progress of the case we find loss of sexual power, diminution of vision and optic atrophy, the ocular symptoms with the persistent headaches first establishing the diagnosis of tumor. Toward the end appeared vasomotor symptoms, somnolence, physical weakness and apathy and lack of mental grasp.

Perhaps the most interesting feature of the case is the anomalous distribution of visual field impairment, an impairment difficult to explain even with the pathological findings before us. In the first place, the recurring attacks of hemianopsia extending over a long period of time are perfectly consistent with functional disorders of the visual centres (migraine). It is difficult to believe that they could have been produced by pressure upon an optic tract persisting for so great a length of time and yet producing no permanent defect in the field or other sign of intracranial pressure. The next point of interest is the appearance of achromatopsia in one of the otherwise unaffected half fields. Achromatopsia is a rare condition, if we may judge from the lack of reported cases; it is, however, possible that the condition would be oftener found if oftener sought. Enough cases are already on record to establish the occurrence of loss of color sense in a field which shows no change in the perception of objects. The disturbance has hitherto been regarded as one of central origin, Gowers, for example, stating that it probably depends upon disease of a part of the occipital lobe, in which lies a separate color centre; Villebrand regards this centre as lying in front of the apical region, through which impressions pass, however, to reach it. According to this author, disease of the apex itself causes loss of form and color sense only in the corresponding half fields. This view would certainly be in perfect analogy with that of other cerebral symptoms, and yet our case forces us to recognize the possibility, at least, that achromatopsia may result from peripheral lesion. The case recently reported by Leszynsky points in the same direction.

It is not improbable that when the patient was first seen (July 20, 1896), that the slight defect of sight in the right eye was due to pressure on the nerve fibres supplying the macular region, and not, as was then supposed, to the floating opacities in the vitreous. Nine months later the central vision of the right eye has decreased to five-tenths, while the field for form and color remained perfectly normal, and in connection with this a well-marked temporal hemianopsia had developed in the left eye, but the macular fibres not being involved, central vision was unimpaired. From this time on there was a gradual failure of central vision in both eyes, with very little change in the visual fields for at least a year. Three months before his death, a well-defined nasal hemianopsia had developed in the right eye, giving a left homonomous hemianopsia indicating conclusively pressure on the right optic tract.

It should be noted also that while the temporal field of the right eye was normal for form at this time, the color field had entirely disappeared. The earlier visual fields showing monocular hemianopsia and a perfectly normal field for form and color of the other eye, with defective central vision, were difficult to account for, or rather it was not easy to understand at just what points pressure was exerted to give this result. The optic tract and chiasm were not removed with the growth, and as the writers were unfortunately absent from the autopsy, the exact points of pressure are still more or less theoretical. The chiasm would seem to be the only point where pressure could have been exerted on the macular fibres independently. These fibres are of course at the outer surface of the nerve just after their exit from the globe, but approach nearer its centre as they progress backward and are entirely central at the optic foramen. In front of the chiasm the bundles form a horizontal oval. Entering the chiasm they almost reach the periphery — and interlace — the macular fibres being both crossed and uncrossed at about the centre of its dorsal surface. In the tract they again become too deeply seated to suffer independently of the other nerve bundles. The crossed fibres to the left eye might perhaps have been involved just as they left the chiasm to join the right optic tract, and the later development of a left homonomous hemianopsia would certainly favor this view if the early and extensive involvement of the macular fibres of the other eye could be ignored. The visual condition is best accounted for by supposing the crossed fibres to have been pressed upon, either at the anterior or posterior part of the chiasm, probably the latter and to the right, just before joining the uncrossed fibres to pass to the tract. A small nodule of the growth involved first the macular fibres of the right eye, before they had reached the point of separation into crossed and uncrossed, and later those of the left, probably near the centre of the chiasm. Later, the growth seems to have extended backward and to the right, exerting enough pressure on the crossed fibres of the right eye to destroy the color perception, but not the field for form, while the complete destruction of function of the uncrossed fibres of this eye was probably due to extension into the right optic tract.

CONCLUSIONS.

(1) Congenital peculiarities in growth resembling those of acromegaly, but occurring in otherwise healthy individuals, may point to structural defect of the pituitary gland, a defect sometimes furnishing the starting-point for new growth later in life.

(2) The occurrence of pituitary tumor without definite symptoms of acromegaly does not necessarily disprove a connection between this organ and this disease, for the persistence of even a small amount of healthy gland tissue is sufficient fairly to carry on the function of the pituitary body.

(3) The combination of general symptoms of new growth with optic atrophy and loss of temporal field of vision makes the diagnosis of pituitary tumor almost certain.

(4) Hemiachromatopsia is not necessarily of central origin.

SPECIAL PREPARATIONS OF PATIENT, SURGEON, INSTRUMENTS, SUTURES, ETC., AND POINTS IN TECHNIQUE OF OPERATIONS FOR HERNIÆ.

BY J. COPLIN STINSON, M.D., C.M., SAN FRANCISCO, CAL.

As the excellent results obtained in operations for the cure of hernia depend partly upon aseptic and antiseptic technique, etc., I shall briefly describe and concisely review the several points in the preparation of the patient, surgeon, instruments, etc., as they apply more especially to hernia operations.

The following methods of preparation, etc., are followed by the writer, who, after repeated trials, has found them perfectly satisfactory.

PREPARATIONS OF THE SURGEON, ASSISTANTS, PATIENT, ETC.

Wash our hands, wrists and forearms and the skin of the patient at the field of operation with soap and water aided by a stiff brush. Remove, with an aseptic nail file, all the dirt and other foreign materials on, under and around our nails. Immerse our hands, etc., in boiled water, using an aseptic brush freely; dry with sterilized towels; immerse for several minutes consecutively in alcohol, 1–2,000 watery solution of bichloride of mercury, and warm sterilized saline solution, and finally dry them with sterilized towels.

Surgical cleanliness of the patient is obtained by the method employed for cleaning the hands, but in addition, the skin at the field of operation is always shaved first and after disinfection is completed and when immediate operation is not done, a pad of moist bichloride gauze, wrung out of 1–2,000 solution is kept in contact with the skin for several hours previous to the operation. Previous to the operation the skin is cleansed with sterilized warm salt solution.

Cleanliness of the patient's alimentary canal is aimed at by emptying the bowels by mild cathartics and laxative injections.

Aprons for surgeons, assistants, etc. — Use rubber or other waterproof aprons which are covered in front, corresponding to the field of operation, with boiled towels wrung out of 1–2,000 bichloride solution.

Instruments are wrapped in a towel and sterilized by boiling for ten minutes in 1–100 bicarbonate-of-sodium solution, which prevents tarnishing of the metal and makes the knife, etc., retain their keen cutting edges. At the time of operation, instruments are allowed to remain on the boiled towel, but are covered with a sterilized towel.

Towels are sterilized by boiling in water for ten minutes. They are removed from the water at or shortly before the operation with sterilized hands.

Sponges. — For sponges use pads of boiled butter or cheese cloth taken from the vessel in which they have been boiled, at or shortly before the operation, with sterilized hands.

Gauze. — Absorbent gauze, which constitutes the principal dressing, and from which the sponges are cut, is prepared by boiling cheese or butter cloth in a solution of carbonate of sodium, 1–16, for two hours. It is then wrung out and boiled in saline solution or water for ten minutes. The soda saponifies the fat and breaks up the gummy elements of the cotton fibres. The gauze is used from the vessel in which it is boiled. Any gauze that is not used at the time for the operation may be rolled in a sterilized towel for subsequent dressing, etc.

Iodoform powder or gauze is not used by the writer as a dressing, etc., as it has a foul odor, sometimes causes poisoning, and when the gauze or the powder is not antiseptically prepared, handled and sealed, infection of the wound occurs. The iodoform and the fixing agents in the gauze interfere with the capillarity of the gauze, and thereby destroy the mechanical action which is the chief value of gauze dressings.

Position of patient during operation. — In the majority of cases use the dorsal position with the legs extended, but when there is difficulty in reducing intestine, etc., or if the intestine, etc., come down in the field during operation, use the Trendelenburg position until after the peritoneal cavity is closed and internal ring sutured.

Absorbent cotton. — All the cotton that comes in immediate contact with the wound must be boiled in water or salt solution for ten minutes before it is used.

Sutures and ligatures, etc. — Silk is used only for suturing the skin. Fine strands answer this purpose well. If subcuticular stitches are employed, use fine chromicized catgut, as it lasts long enough for firm union and does not have to be removed, as it is absorbed. The silk is boiled in sterilized water for fifteen minutes and then stored on a glass spool in boiled water in a sterilized bottle.

Primary, firm and durable union should be regarded of first importance in our operations, hence the buried suture and ligature materials are of prime importance. Many failures in hernia cases are due to the use of sutures, for example, ordinary catgut and tendon, that are absorbed before the union is firm and durable; to the use of non-absorbable sutures, or not suturing each of the layers separately and thus accurately. The structures dealt with in hernia operations are in the main tendinous and fibrous, requiring several weeks for durable union. Non-absorbable materials, for example, silk, wire, silkworm-gut, etc., should not be used as buried sutures and ligatures, as they all, at times, even when the wounds heal by primary union, act as foreign bodies, work their way to the surface, and form slow-healing, painful and troublesome sinuses. Cases have been observed in which patients have been incapacitated for weeks and months on account of sinus formation. At times repeated operations have to be done to remove the ligatures or sutures, and still later second operations to cure the hernia. In earlier articles the writer reported cases in which sinuses formed following the employment of silk, silver wire and worm-gut as buried sutures. In addition, the writer reported a case in which sinuses formed following the use of too heavily chromicized catgut. Since then he has seen several such cases.

Chromicized tendon is the most suitable material for a buried suture, as it is non-irritating, and when well chromicized is not absorbed for two or three months, when it is replaced by fibrous tissue. Busse in his experiments showed that perfect tendinous union does not occur under ten weeks, or just about the period required for the absorption of chromicized tendon. In the absence of tendons, chromicized catgut should be used as buried sutures. Marcy maintains that kangaroo tendons, if properly chromicized are very resistant and that they remain in the tissues for three months before they are absorbed. The writer has seen kangaroo tendons, supposed to be properly chromicized, that were absorbed in about eight days. To ligate vessels and close the peritoneum use fine chromicized catgut, for the skin fine chromicized catgut or silk.

The catgut. — The writer in earlier papers described the following method of sterilizing and storing catgut, which has proved to be absolutely reliable. Two sizes are all one needs, No. 25 and 20, according to the American wire-gauze system, the fine catgut to be used for the skin, peritoneum, ligating vessels, etc., the other, also chromicized, in the absence of chromicized tendons to be used as buried sutures, for the other layers. The preferable form of catgut is that put up

in bowlines, each about one yard long and rolled separately in bunches. If the catgut does not come in this form, then for convenience cut into pieces one yard long. Each strand is folded on itself and made into a figure of eight by tying the end around the centre, where the loops meet. Bowlines are selected because they are more easily prepared and more handy to manipulate in operations. Before the operation a sufficient number of them can be removed with sterilized forceps from the storage bottle without infecting the rest of the gut.

To prepare the gut. — (1) Place the bowlines in ether for several days to remove the fat; (2) change to a sterilized vessel containing a 1–2,000 solution of corrosive sublimate in pure ether for three days or in a 1–4,000 for a week, to disinfect the gut. Remove the gut from the bichloride-ether solution and chromicize it by placing it in an alcohol solution of potassium bichromate made as follows: Take 15 grains of potassium bichromate, dissolve it in an ounce or so of sterilized water, add the chromate solution to a pint of ordinary alcohol (sterilized). Leave the gut in this solution till it is a golden color (usually about twenty-four hours are sufficient), when it is removed and placed in a sterilized basin and sun-dried, which takes a couple of days or so longer. To complete the sterilizing process and have the material in the most suitable storage fluid, place the gut in a sterilized bottle with a screw or other air-tight top. Pour in ordinary alcohol to more than cover gut. The alcohol should about half fill the bottle. Stand the bottle in water which reaches nearly to the lower edge of the screw or other top. In order not to take a chance of breaking the bottle, stand it on a folded towel placed in the bottom of the vessel containing the water, which is heated to the boiling point. When the air is driven from the bottle by the boiling alcohol, screw down the top tightly. It takes a couple of minutes to drive off the air. Leave the sealed bottle in the water at the boiling point for ten or fifteen minutes. At the lapse of the time the bottle is removed, allowed to cool, and the gut is ready for use. There is no danger of an explosion with the top screwed down or otherwise fastened tightly. Watery solutions for sterilizing catgut are avoided by the writer, as they are not suitable for catgut. Water swells the strands to such a size that they are unfit for neat, accurate and esthetic suturing. The gut is sun-dried to get the same effect which is obtained in the process of tanning hides. The bichromate of potash penetrates the tissues of the gut and becomes so intimately associated with the fibrils that it is not dissolved out by heat and solutions. The chromicizing process more than doubles the resistance to absorption of the catgut in the tistues. Catgut left longer than about twenty-four hours becomes too resistant and may not be absorbed in months. Any catgut that is left over after an operation is returned to the storage bottle with sterilized forceps, if it is aseptic; otherwise it is thrown away. Only a comparatively short portion of the surgeon's time is engaged during the processes described, in return for which he has an absolutely sterilized material. The tendons, catgut and silk used during operations are placed immediately before and during them, between sterilized folded towels wrung out of 1–500 mercuric-chloride solution.

Needles and technique of suturing, etc.— For passing stitches, needles should be used that can be quickly threaded, easily handled without a holder and that readily penetrate the tissues without contusion or producing hemorrhage. The writer finds that a moderately fine curved Hagedorn needle about two and one-half inches long with the curve corresponding to the quarter of a circle answers best for introducing the buried sutures. In fat patients a needle with the curve corresponding to the half of a circle should be used for the deeper layers, while a fine straight Hagedorn is best for the skin. The amount of tissues that is included in the bite of the needle and the stitches should be just sufficient so that the edges are broadly and evenly approximated and so that the stitches do not tear out while primary and durable union are taking place. By these means the edges are in contact without tension. If an extra or unnecessary amount of tissues is included in the bites of the needle, there is liable to be some tension on the sutures and gaping of the approximated edges which interfere with union and favor recurrence of the protrusion.

The sac should be opened, its contents cleared out, all omentum that can be pulled down excised, the sac, its neck, and as high as possible the peritoneum continuous with it removed and the cut edges of the serosa closed with continuous sutures. In inguinal hernia the subsequent steps of suturing used by the writer are as follows: The internal ring is closed with continuous sutures, leaving only sufficient room at the lower angle close to the pubic bone for the spermatic cord; the internal ring is reinforced and the canal closed by uniting with a layer of continuous sutures the internal oblique and transversalis muscles and their conjoined tendon to Poupart's ligament, leaving only room enough next to the pubic bone for the cord; suture the cut edges of the aponeurosis of the external oblique and the pillars of the external ring, which are made to snugly embrace the cord, and finally the skin but not the fat is sutured without drainage. Supracorrection of the peritoneum causes total obliteration of the hernia sac. Each layer is sutured separately and accurately to obtain firm and durable union and build a wall as thick as possible. The spermatic cord is placed at the lower angle of the internal ring close to the pubic cone, as this is its normal position, where it is not subject to pressure or in any other manner interfered with. During operations the deeper structures are brought well into view by gently holding aside the superficial structures with retractors, and thus the sutures can also be inserted neatly, quickly and accurately in the deep layers by lifting them with forceps.

In removing omentum it is perfectly safe and best to ligate the vessels only. To insure the ligatures from slipping, use the fixation ligature. The vessels to be tied are defined by spreading out the omentum, and a curved needle carrying fine chromicized catgut is passed around the artery or vein by piercing the tissues of the omentum immediately surrounding the vessel. The ligature is then tied in a reef knot and the vessel and other structures forming the omentum are severed beyond the ligature. All other vessels are similarly treated and the omentum cut away beyond the ligatures.

During omental excision by ligating vessels only in the omentum and using fixation ligatures, the ligatures are fixed in the omentum and cannot slip. It is unnecessary and absolutely unsurgical to ligate the fatty tissues of the omentum. By ligating the vessels only

the work is easy, safe and esthetic, and it does away with numerous and mass ligatures, lumps of fat constricted by ligatures, omental stumps, non-absorbable, dead and wandering ligature, adhesions, sloughing, omental inflammation, local and general peritonitis and secondary operations for the removal of the omentum stumps and adhesions, etc.

The most suitable continuous stitch at present in use is the continuous single knot stitch as described by C. Ford. For practical purposes about every eighth stitch should be tied with a reef knot. In order that it does not untie and that no cut ends are left to irritate the wound, the knot should be tied without cutting the thread. This can be done by using the continuous double-knot stitch. With continuous stitches the work is done quickly, the coaptation is excellent, as the whole of the opposed surfaces are brought together, the circulation at the united edges is good, the tension is adjusted satisfactorily and the knots are so few in number that they do no harm, in fact, offer some advantages.

Interrupted stitches, or continuous reef or other double-knot stitches should be avoided as they are tedious and slow. The excessive number of knots, when the stitches are buried, are local irritants and may delay union. Extra time is taken in adjusting, tying and regulating the tension of the knots. The threads are slippery, may become tangled, and complicated maneuvres are required to insert and tie them.

If interrupted stitches are used as buried sutures the cut ends are points of irritation. The knots are liable to untie if the ends are cut short, and if left long they increase irritation. Mattress stitches should not be used, either buried or cutaneously, as the edges are not accurately and completely approximated. From their method of insertion the plane of force is changed, coaptation of the opposed surface is along only a line of the edges, the superficial edges evert on account of the curvature of the plane of force, and consequently there is imperfect approximation. The spaces between the stitches are not supported. The necessity of reversing one's movements while suturing renders the mattress stitches slow of insertion. The cobbler's stitch, or, as Marcy called it, the double continuous stitch, should also be avoided. It is slow, tedious, cumbersome and crude. Tension cannot be well adjusted. The changing of needles and directions of passing the sutures make needless work. There is also marked interference with the circulation along the line of union on account of the method of insertion of the stitches.

While inserting sutures, the stitches must not be drawn tightly on account of the danger of compression anemia and subsequent sloughing, which would interfere with perfect repair in structures that need great care on the part of the operator. In closing the skin and fatty layers, the needle and sutures include the whole thickness of the skin, but no fat. If any fat is taken up in the stitches it will subsequently give way under the pressure and fat necrosis result, with the discharge of fluid, etc., from the wound, which cause delayed healing, the sutures being loosened, the margins of the skin drawn apart a trifle and the scar is flattened out into a broad line within a few weeks and remains permanently as a scar. Fatty layers can be approximated by manual pressure applied on the outside of the wound, and after the skin sutures are tied, the cut fatty layers remain in contact by atmospheric pressure. To make sure of a very fine scar leave the silk sutures in ten days or longer if there is no irritation. Afterwards apply freely to the line of union, and beyond it, collodion, which prevents stretching of the scar line.

Mattress stitches, whether buried or otherwise, should be avoided, as has already been pointed out earlier in the paper, as they do not coapt accurately and evenly the whole broad surface of the edges to be approximated. Approximation is perfect, as it is along simply a line of cut edges. This is due to the manner in which the stitches are inserted and the direction in which they pull. Layers of sutures (not buried) of silver wire or other material should be avoided, as the edges of the different layers are not brought accurately together, but overlap, become irregularly matted together and adhere to one another and thus the union that results is liable to be weak and evanescent. Wire and worm-gut sutures should also be avoided in hernia operations, as they cut and irritate the tissues and have to be removed before the union is firm and durable. The use of these sutures also shows great imperfections in the surgical technic of the operators employing them, as in all probability their results from absorbable sutures have been unsatisfactory, owing to either imperfect methods of sterilization or imperfect technic, or both.

Basins are sterilized by boiling, or more quickly by pouring a small quantity of alcohol into them and igniting it; the heat and flames disinfect their interior.

Irrigating solutions. — The only solutions employed are warm and hot sterilized saline solution and warm and hot sterilized boiled water. In septic cases free and thorough irrigation with hot water or hot salt solution should be used, followed by sponging and drainage. In cases of diffuse peritonitis withdraw well to the surface all the infected intestines, irrigating freely the cavity and the infected coils, remove all septic material, dry cavity and infected intestines as thoroughly as possible with sponges, return the intestines and use drainage.

Physiological saline solution, representing the normal proportion of chloride of sodium in the blood, is the least irritating, and the most useful, general irrigating solution. It is made by boiling ninety grains of chloride of sodium in one quart of water. In the absence of hot saline solution use hot boiled water for irrigation and sponges. Normal saline solution or water is practically unirritating. The sponges are kept in the basins of it at an operation, and the surgeon's hands are washed in it once in a while, while he is at work.

Drainage and the material to use. — If abscess, sloughing, septic peritonitis, gangrene, or other septic condition is present drainage should in most cases be employed. In those cases where one is in doubt about drainage, be on the safe side and use it.

Drainage with a gauze wick or wicks, made by rolling loosely a strip of absorbent gauze in rubber or gutta-percha tissue, very much as one rolls a cigarette; several small holes are snipped in the rubber after it has been rolled, so that the fluids can enter at more than one point — R. T. Morris's wick — is very satisfactory. The wick extends from the infected area to the surface through the incision, which is closed by sutures as far as possible, leaving only sufficient room for the passage of the wick. If the area of infection is circumscribed and limited satisfactory drainage can be

accomplished by one, but if the infection is diffused and widespread two or more wicks should be used. The end of the wick is allowed to rest in a mass of absorbent gauze on the surface of the abdomen and capillary drainage proceeds usefully and at once, until the mass of gauze becomes saturated with serum, when capillary power stops. The larger the mass of gauze drains or packings within the abdominal cavity, and the smaller the mass on the outer wall, the less effective is the drainage. A mass of gauze within the abdominal cavity is soon filled in its meshes with coagulated lymph, and its capillary action then ceases. The lymph unites gauze and tissues together, repair begins, and nature attempts to encapsulate the gauze. When the gauze is removed, the tissues are disturbed, the excess of reparative lymph which has been thrown out makes an inviting field for bacteria, and repair cannot proceed rapidly until the excess lymph has become absorbed or has broken down. Gauze is rendered less absorbent and consequently less useful if loaded with iodoform and fixing agents. Large gauze packing, glass, or other stiff drainage tubes should not be used for drainage, as such materials have a death-rate of their own. Of those patients who recover after such methods of drainage, in many their conditions are poor for days; the operations are followed by considerable pain, very annoying tympanites, often obstinate constipation, showing interference with the movements of the intestines. When the gauze packing, etc., is removed, there are always pains due to the tearing of adhesions which form between the serosa and the gauze, and occasionally after the removal of the gauze a collection of fluid escapes, showing that drainage was imperfect. Sometimes fecal fistula forms after the use of these methods of drainage, and in all cases so treated there are left large cavities to granulate, which delay healing for some time and are most liable to be followed by hernia if secondary operation is not performed, dissections freely made, and careful and separate suturing done of the different layers.

In order to obtain the full benefit of capillary drainage, the end of the wick or wicks must be placed in contact with absorbent gauze on the surface outside of the wound, and this gauze must be changed and fresh gauze replaced when it becomes saturated to the point of decreased power, as otherwise it will have little mechanical effect. Reparative lymph is prevented from encapsulating the drawing column of gauze by the surrounding gutta-percha tissue or oil silk, which also prevents disturbance of the tissues when the gauze is removed, as union does not take place between the tissues and the waterproof material. For most purposes the wick is not much larger round than a lead-pencil. The holes in it are not made large enough to allow the tissues to become adherent to the gauze within. Adhesions wall off the wick or other drainage apparatus in the peritoneal cavity in about thirty hours when the gauze or wick is shortened or entirely withdrawn, according to the indications presenting. The writer, as a rule, does not withdraw it entirely until the fifth day. The object in proceeding thus is to allow the intestine to come together as rapidly as consistent with safety and thus obliterate the cavity formed by the wick or wicks. After this, if further drainage is necessary, carry a narrow strip of gutta-percha tissue or gauze into the wound. A wick long enough to rest on the posterior abdominal wall adjusts itself nicely, is soft, causes no shock, and is easily removed. After its removal completely from the wound, drop in several minims of sterilized balsam of Peru, which facilitates healing and prevents sinus formation. A fecal fistula will not form from the use of a wick, nor will adhesions follow its use, but some may if gauze strips, packing, etc., are used for drainage. The writer prefers the wick or the wicks to the gauze strips or other methods of drainage. The gutta-percha tissue around the rolled gauze has several other advantages over plain gauze strips, etc., that is, convalescence is more rapid, less painful, fewer disagreeable local symptoms, while the wick covering prevents adhesions between the gauze and serosa.

The length of time the patient is confined to bed when drainage is used is not much increased except in those cases wherein fecal fistulæ form. The duration of confinement, after an operation in which drainage is required, is lengthened only the time it takes for the cavity to obliterate up to the skin surface and the latter to become firmly and durably cicatrized. The writer insists that patients in whom drainage is used should remain in bed for two weeks after the wound has firmly healed. This is done in order to obtain a very solid cicatrix and thus lessen the chances of recurrence of the protrusion. If a single wick has been used as a drain and the balance of the wound has been sutured accurately in separately layers, such a small opening is left after the removal of the wick that the layers fall fairly close together and unite about as well as if they had been sutured. Hernia, under most circumstances, does not develop after the use of a wick used for drainage.

Dressings, etc., after hernia operations. — Place a couple of layers of moist or dry sterilized gauze next to wound, hold it in place by long strips of adhesive plaster, then a layer of cotton, and apply firm spica bandages. Dress the wound on the seventh day or earlier if there are indications. Remove the fine skin silk sutures on the twelfth day or thereabouts, reapplying after each dressing the gauze, cotton, spica, etc., as before. Keep the patient in bed two weeks or longer if possible. If primary union is not obtained do not allow the patient out of bed till solid cicatrization is completed. If union by first intention is obtained the firm dressings, etc., are removed about one month after the operation, when the patient is allowed to go without any pad or truss.

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ACUTE UNIVERSAL ECZEMA, WITH SPECIAL REFERENCE TO ITS ETIOLOGY.

BY ALBERT E. BROWNRIGG, M.D.,
Assistant Physician New Hampshire Asylum, Concord, N. H.

SOME authorities[1] doubt the existence of this clinical variety of eczema. That it does occur, however, as perhaps the most troublesome of the acute derma-

[1] H. W. Stelwagon, Philadelphia: on page 105, Mracek's Atlas.

toses has been repeatedly observed by reliable men. Crocker,[2] of London, mentions having seen two cases; Mracek[3] refers to several, some of which proved fatal; most writers on dermatology speak of it, though all agree that it is a very rare form.

We would exclude from this term those cases of acute generalized inflammation of the skin following the application of some drug or other chemical irritant. Such cases, though similar, are generally not true eczemas and are better classed under "dermatitis venenata." With this exception we find a striking uniformity in the clinical descriptions of this type.

Beginning usually on the face or chest the whole surface is rapidly affected, often within a few hours. All anatomical forms of eczematous eruption are present, followed by shedding of large areas of epidermis and the production of extensive weeping and encrusted surfaces. The intense itching and burning causes continuous suffering and loss of sleep. Great sensitiveness to cold is usually complained of, severe disturbance of the alimentary tract is an invariable accompaniment, and in debilitated subjects a grave result may follow.[4] Recovery, however, is the rule, though localized chronic patches often remain.

Despite the claim of Unna that *all* eczema is due to a hypothetical microbe, and the tendency of the time to favor the microbic origin of disease, the clinical facts thus far obtained would seem to limit us to a different view. This is especially true where the onset is associated with some acute constitutional derangement or follows the habitual use of irritating antiseptics, as in "surgeon's eczema." And it is found, too, that therapeutic measures to be successful must be directed to the removal of the many external sources of skin irritation and the restoration of deranged vital functions rather than to vigorous disinfection of the skin alone. In fact, it seems probable, with our present knowledge, that any factor capable of causing continued skin irritation may in debilitated states start up an eczema.

This has led many to believe that the source of eczema invariably acts from without and that the systemic derangement is only accessory in lessening recuperative power. It is so often observed, however, that cases occur without any demonstrable external source of irritation that many explanations of the "internal causes" have been advanced. Crocker explains the "faulty innervation" theory first proposed by Hebra as the depressant action of an irritated organ upon the vasomotor nerve centres, with consequent capillary dilatation and eczematous inflammation. "Latent gout," "lithemic diathesis," "general debility" and other vague terms are but evidences of the difficulty of fixing upon any definite etiological factor in this class of eczemas. Any attempt to account for all such cases — often widely differing in clinical type — as due to the action of some one condition has proven unsatisfactory. Indeed, J. N. Hyde[5] but expresses the most generally accepted modern view when he says, "It is certain that many varieties of eczema are directly dependent upon several systemic states, such as dyspepsia, constipation, etc." Now, acute universal eczema is one of these varieties, the cause of which, it is generally acknowledged, acts from within. And the onset is so acute and the inflammation is so severe and generalized as would at least suggest the excretion of some irritant by the skin.

From the study of reported cases and the personal experience of the writer, it would seem that the acute universal form of eczema is nearly always dependent upon a deranged intestinal canal; that this derangement is due to greatly increased putrefactive changes in the small intestines, with the production of numerous toxins, evidences of which can readily be detected in the urine; that these products irritate the kidneys in their excretion and probably form the irritating factor when given off by the skin; and that the chief therapeutic indications are intestinal disinfection and the protection of the already inflamed areas.

It is not claimed that these conclusions are wholly new, and it is to be regretted that so little is as yet known of the toxic substances themselves. That they sometimes act as a causal factor in other more localized eczemas seems reasonable and to be borne out by clinical experience. We have proved the therapeutic suggestions valuable in practice, and believe that many serious cases might be relieved that have long resisted other well-recognized treatments for this most protean disease. As a typical example the following case is presented:

F. R., age twenty-six years, a deaf mute, has been insane since 1895. His mental history, that of chronic mania, will be omitted as not bearing on this subject. His physical condition has always been good, and there is no history of skin disease or special skin irritability in any of his family. During October, 1898, there had been less mental agitation, his appetite and bowels were regular, and he went to walk daily with his attendant. On November 7th he, with others on the ward, had an attack of diarrhea and he was kept in the house on this and subsequent days. The diarrhea stopped without medicine in his case and was succeeded the next day by constipation, which continued for several days before attention was drawn to it. On the morning of November 10th the patient first complained of itching. Examination showed a diffuse erythematous eruption extending over the entire surface of the trunk and extremities. There was considerable inflammatory edema of the skin, especially about the scalp and face. Vesicles formed on various parts, particularly on the front of the chest and forehead. In other regions the redness was diffuse, with less swelling, but associated with numerous fine red papules. The genitals were only slightly involved.

Itching and burning sensations were very intense and harassing and kept the patient from sleep. He often complained of cold and shivered, though the ward was warm. His appetite was poor and his mental agitation increased. The temperature was slightly elevated the first week, but never above 100°. So uncontrollable was the desire to scratch that his hands had to be restrained in stiff duck mittens fastened to a belt to keep him from tearing himself. As it was, in two or three days his short hair was a closely matted mass of crusts with serum oozing from beneath. His face was so swollen as to completely close both eyes. The conjunctivæ were not involved. The front of his chest was one extensive weeping surface, with crusts and smaller weeping areas on various other portions of his body and limbs. Even the palms and soles

[2] H. Radcliffe Crocker, London: Text-Book of Diseases of Skin, p. 144. P. Blakiston, Son & Co.
[3] Prof. Franz Mracek, Vienna: Hand-Atlas of Diseases of Skin, p. 104. W. B. Saunders.
[4] Marcacci: Fatal case reported in Giornale Italiano delle Malattie ven. e. d. pelle, June, 1878. Referred to by Crocker.
[5] J. Nevins Hyde: Twentieth Century Practice, vol. v, p. 170.

showed considerable scaling and crusting. By the end of the first week his general appearance reminded one of the excessive scaliness of acute exfoliative dermatitis. Here, however, scales were few in comparison with the many large thick crusts. At the start ivy poisoning was suspected but easily ruled out, as there had been absolutely no chance for exposure. Other external causes of irritation were carefully excluded. The urine was examined, with the following result:

Date, November 12, 1898.
Amount in twenty-four hours, 500 c. c.
Color, slightly high, turbid. Specific gravity, 1.030.
Odor, normal. Sediment, considerable.
Reaction, strongly acid. Solids, 33.6 grammes.
Uph. = + Urea = 2.4 per cent. Chlorine, normal. E. P. = +
Ind. = + + Uric acid = + Sf. = + A. P., normal.
Albumin, slightest possible trace.
Bile pigments, absent.
Sugar, absent.
Total urea, 12 grammes.
Sediment: Occasional brown granular, fine granular and more frequent hyaline casts, mostly of small diameter. Numerous secondary calcic, oxalate and uric-acid crystals. Occasional leucocyte and squamous bladder epithelial cells.
Diagnosis: Active hyperemia of kidneys. Excessive intestinal putrefaction.
Remarks: Indican reaction very intense. Obstinate constipation.

Auto-intoxication was believed to be the cause of the eczema, but it was thought best to test the value of external methods of treatment alone, as often lately advocated. Various of the common antiseptic preparations were tried on one side, but they only aggravated the local lesions. Free opening of the bowels with Epsom salts and enemata relieved somewhat the congestion of the head, but the skin lesions still continued to increase. The stools confirmed the urine story of excessive intestinal putrefaction — were green, slimy and gelatinous, with extremely foul odor, and somewhat similar to those in the grave diarrheas of infancy. Here however the bowels were torpid. Thus the first week passed with constant aggravation of the symptoms. A simple lotion of one-half of one per cent. phenol in lime-water had allayed the itching and kept the exudations from becoming purulent. Zinc-oxide dusting powder was occasionally used.

On November 17th the intestinal trouble was made the point of attack. A strict bread and milk diet was enjoined. Salol was given after meals three grammes (45 grains) the first day, decreasing until five grains three times daily was the regular dose. The urine showed no evidence of carbolic-acid poisoning. The same vigilance against scratching was kept up and the soothing lotion continued. From the first day of this treatment the improvement was marked and continuous. The excoriations dried up, the edema lessened. By the 22d the extremities were nearly free from the lesions. By December 1st there were no weeping surfaces, and with the ordinary methods of removing the crusts he was soon well; though for some weeks after his hands were loosed he would occasionally rub his face and start up the trouble over a small area. On December 9th the urine showed:

Date, December 9, 1898.
Amount in twenty-four hours, 1,450 c. c.
Color, normal. Specific gravity, 1.012.
Odor, normal. Sediment, very slight.
Reaction, acid. Solids, 38.8 grammes.
Uph. slightly — Urea = .8 per cent. Chlorine, normal. E. P. = +
Ind. = — Uric acid, not increased. Sf., normal. A. P. = —
Albumin, absent.
Bile pigments, absent.
Sugar, absent.
Total urea, 11.6 grammes.
Sediment: Occasional bladder and prostatic epithelial cells and few leucocytes. Rarely a hyaline cast.
Diagnosis: Diminished metabolism.
Remarks: Bread and milk diet the last three weeks. Bowels quite free. Salol externally up to three days ago.

After commencing to give the salol, the intestinal disorder quickly subsided, as evidenced by the more regular motions and the urine. The patient began to gain in weight, and there has been no subsequent recurrence of the eczema.

Clinical Department.

A CASE OF CHRONIC CYANOSIS WITHOUT DISCOVERABLE CAUSE, ENDING IN CEREBRAL HEMORRHAGE.

BY RICHARD C. CABOT, M.D., BOSTON,
Physician to Out-patients, Massachusetts General Hospital.

THE patient, Mrs. R., forty-six, a widow, came to me in October, 1895, to find out if there were any trouble with her heart or blood. She had been a masseuse for the last ten years, and of late a blueness of the lips and attacks of prostration while at work had caused great alarm to her friends. The following history was obtained: She was always well as a child. Catamenia always painful, somewhat less so since an operation for dilatation of the cervix some time ago. Since the operation, always has used viburnum with relief. The flow is regular. Six years ago there was a sudden loss of consciousness, with settling of the blood on one side of the face, and her speech was thick and unintelligible. The attack lasted several days. Dr. Withington attended her.

Two years ago, after a period of very hard work, began to have periods of collapse or sudden exhaustion, mental and muscular, coming on suddenly during her work. She takes no vacation, and the attacks are growing more frequent. During such an attack her face gets dark purple and the eyes bloodshot. This symptom-complex occurs sometimes on the street and was once mistaken for drunkenness. Mild attacks are relieved by rest and food; severer ones go on to violent headaches with nausea and prostration for twenty-four hours. The skin is often blotchy, and hot flushes and other vasomotor phenomena are common. Two weeks ago she had an attack of sciatica, during which there were extensive ecchymoses on the outside of the thigh. The upper arms and the thighs have grown fat of late, but the calves and forearms thin. Her appetite is good; bowels regular. She sleeps well, and there are no complaints other than the above.

Physical examination. — Her lips and nose are remarkably cyanotic, whole face dusky and apparently somewhat puffy; tongue clean, cyanotic; no supraclavicular pads; heart apparently normal in size, first sound rather short and valvular, aortic second sound not accented, no murmur; lungs and abdomen negative; slight swelling of ankles; temperature 98.6°; pulse 90. Her urine from 60 to 70 ounces in twenty-four hours. Repeated examinations showed always essentially the following conditions: Specific gravity from 1.011 to 1.016; albumin, very slight trace; no sugar; always a few hyaline casts, sometimes with renal cells adherent; urea eight or nine grains per ounce. Blood showed red cells 10,460,000; white cells, 20,000; hemoglobin, 150 per cent. (about).

Her symptoms went on in about the same way, with occasional attacks of sick headache and exhaustion, and with now and then temporary swellings of the ankles, which, however, always passed off with rest. The

condition of the heart, lungs and kidneys always remained the same. In the following summer she had a good rest and came back to work in the autumn feeling very well, but *cyanosis unchanged*. To test the possibility of myxedema, I had her take thyroid extract for considerable periods several times during the next few months, but without any effect that I could see. The temperature was never subnormal, and the mind always active. In the month of January, 1897, after having a tooth pulled, there was very free hemorrhage, lasting half a day, and controlled only by packing the cavity with gauze. This bleeding seemed to make her feel better rather than worse, but shortly after this she mentioned to me the occurrence of a peculiar attack, occurring while she was walking on the street. She said that her legs suddenly began to make peculiar movements of their own accord, contrary to her will; the movements were described as a rotation of the whole leg inward, followed by the relaxation of the muscles, the rotary motion causing the feet to almost move around each other in a circle. She had to hold on to the sidewalk fence to prevent herself from falling. Within a few minutes the attack passed off and she went about her work. A similar attack occurred a few weeks later, during a railway journey. In February, 1897, I saw her during one of her attacks of sick headache, which seemed at first like many that she had previously had, but during which there soon developed a weakness of the left arm and leg, with intense, persistent headache and vomiting. These symptoms steadily increased for two days, after which she gradually became comatose, and died, March 3, 1897.

Autopsy by Dr. E. H. Nichols showed the following conditions:

(1) Small hemorrhage from the middle meningeal artery.

(2) Passive congestion of all the organs.

No other pathological condition. These notes of the autopsy represent Dr. Nichols's verbal report. No fuller account can be obtained from him.

AN EARLY SIGN OF TUBERCULOSIS.

BY THOS. F. HARRINGTON, M.D., LOWELL, MASS.

A RECENT report of the League for the Prevention of Tuberculosis says: "For every six persons in this country (France), at least one dies of consumption. Of the 850,000 deaths that occur every year in France, over 140,000 are caused by pulmonary tuberculosis or phthisis, and this number, instead of decreasing, goes on augmenting every year. All epidemics and contagious diseases combined — typhoid, varioloid, scarlatina, measles, diphtheria, cholera, etc. — do not cause half as many deaths." That the conditions in France are but the portrayal of those in other countries was evident from the published reports of the recent International Congress for Tuberculosis held at Berlin in May of this year.

It is now generally admitted that if the disease could be detected in what might be called the pretubercular stage, before the presence of the bacillus is demonstrable or before auscultation and percussion reveal the presence of the disease, a good step in advance would be taken towards the reduction of the number of cases now reported as incurable.

Inasmuch as science to-day possesses a knowledge of the means of diminishing the ravages of this disease any observation tending to recognize the disease, especially in its very early stages, should be made known, even though the observation be incomplete or the deductions faulty. The glistening eye of the consumptive has often been commented upon, as well as the pupil state in many diseases, but there is a condition of the eyes which is quite constant in patients who present themselves in the physician's office or at the clinic, and who make no mention of any symptom suggestive of a tubercular trouble, and in whom there are no evidences, either to physical or microscopic examination, of tuberculosis. I refer to a *widely dilated state of both pupils*, not a paralyzed pupil, but rather one which seems to be in a more or less constant state of dilatation, due to some irritation along the track of the nerve fibres in the cilio-spinal region, or perhaps an irritation of the sympathetic, brought about by some blood change associated with very early tubercular infection not yet fully recognized. I have repeatedly observed this condition of the pupils in persons who were apparently well, also in those exhibiting manifestations of a liver, stomach or intestinal disturbance, with no reason for suspecting tuberculosis; yet so frequently has tuberculosis followed at a later day that I have come to associate widely dilated pupils with incipient tuberculosis. Again and again I have made a note of the pupil condition in patients in typhoid fever, pneumonia, measles, post-operative surgical cases, etc., and so uniformly has tuberculosis developed in those showing the dilated pupils that I now give a guarded opinion in prognosticating such cases. I readily admit that such a sign is not infallible, and that there are cases of tuberculosis in which it does not occur as a premonitory sign, also that some persons have widely dilated pupils without tuberculosis ever developing. Yet, I offer it as the result of individual observation in the hope of interesting those who have dealings with a large number of tubercular-exposed suspects in order that the value of a sign so easily recognized may be disproved or confirmed. If the presence of dilated pupils be the cause of instituting preventive measures against tuberculosis in any number of cases, some good will necessarily result, much more in fact than can possibly follow the detection of the bacillus in the sputum or the employment of any means yet discovered for the mitigation of the ravages of this terrible slaughterer of mankind.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

(Continued from No. 22, p. 552.)

COCAINIZATION OF THE SPINAL CORD.

BIER[15] relates his experience with an entirely new application of a local anesthetic to produce general anesthesia. By the bold expedient of throwing small quantities of very dilute cocaine solution (0.005–0.01 grammes of cocaine) directly into the spinal canal he attacks the nerve roots and ganglia themselves as well

[15] Deutsche Zeitschr. für Chirurgie, April, 1899; The Medical News, July 1, 1899, p. 15.

as the non-medullated nerve trunks before their emergence from the spinal column and produces satisfactory anesthesia of the whole body beneath the nipple line. Insensibility is complete seven or eight minutes after the injection, which is done after the manner of Quincke's lumbar puncture, made painless by a preliminary Schleich's infiltration, and continues for about three-quarters of an hour. Strange to say, heat and cold perception and also the touch and pressure senses are preserved, but all impressions of pain are entirely obliterated. Because of this, and inasmuch as it seems incredible that the entire thickness of the large nerve trunks should be permeable by the solution in so short a time, the inference is drawn that the pain-conducting fibres are placed at the periphery of the nerve bundle.

Bier performed in this way such severe operations as osteoplastic resection of the ischium, knee and ankle joints, necrotomy of the tibia, resection of the femur, etc., to the perfect satisfaction of the patients. By experiment on himself and a colleague he also proved that the anesthesia was absolute and its production unaccompanied by unpleasant sensations.

Unfortunately for the vogue of the new method, however, the after-effects are quite as undesirable and much more prolonged than those following chloroform or ether, and consist in dizziness, severe headache, nausea and vomiting. As these symptoms do not put in an appearance till a number of hours after the operation it is assumed that they are due merely to the disturbance of the cerebro-spinal system and not to any direct toxic effect of the drug, and it seems probable that modification of the solution employed may eliminate these difficulties.

While in its present form suitable only for individual cases where the use of the usual anesthetics is inadmissible the idea is a very promising one and opens up a most suggestive field for investigation.

A CASE OF CEREBRO-SPINAL MENINGITIS TREATED BY LAMINECTOMY AND INCISION OF THE DURA MATER IN THE DORSAL REGION; DRAINAGE; RECOVERY; REMARKS.

Rolleston and Allingham, in an article on this subject,[16] report the history of a case upon which they operated as follows: An incision six inches long was made over the lower dorsal spines and laminectomy of the seventh and eighth dorsal vertebræ was performed. When exposed the dura mater was seen to bulge. It was incised for about an inch in the long axis of the cord. Coagulated lymph and cerebro-spinal fluid to the amount of about three ounces came out. Some of the fluid, soaked up in cotton wool, and the lymph were examined by the bacteriologist, but no diplococci were found. A drainage tube was inserted and no attempt was made to unite the incised margins of the dura mater. The skin was loosely approximated by nine sutures and the usual antiseptic dressings were applied. Next day the patient was decidedly better. His neck was less rigid; the knee-jerk was obtained on the left side but was absent on the right. The hands were less flushed than before. There was a free discharge of clear fluid from the wound necessitating its being dressed twice a day. For the following three and a half weeks the discharge from the wound continued, but at intervals of two or three days the discharge became impeded by the healing of the wound and as a result of this obstruction the patient became ill, his temperature going up to 102° or 103° F., his head ached, and the muscles of the neck (which were at other times normal) became rigid. All these symptoms disappeared when the wound was dressed and a free escape of fluid resulted. These symptoms therefore appeared to be due to increased pressure exerted by the cerebro-spinal fluid on the brain and upper part of the cord.

As far as the authors can find out, the spinal dura mater has not been freely opened before in acute cerebro-spinal meningitis. This procedure, however, is only carrying further what has already been done, namely, lumbar puncture, while in cases of chronic non-tuberculous posterior meningitis in infants Mr. Ballance has trephined the occipital bone and drained the posterior subarachnoid cistern. This method of treatment has therefore been already applied to the posterior fossa of the skull in a disease which is very closely allied indeed to epidemic cerebro-spinal meningitis, for Still comes to the conclusion that the micro-organism of simple posterior basic meningitis of infants is almost identical with the diplococcus intracellularis of epidemic cerebro-spinal meningitis.

As compared with lumbar puncture, laminectomy and incising the spinal dura mater is of course a rather more formidable proceeding, but, on the other hand, it gives exit to a much larger quantity of fluid and is a more radical method of treatment, inasmuch as it establishes a satisfactory drainage, and it may be added that in an experience of some twelve laminectomies the surgical writer of this article has never observed any untoward results.

In conclusion, the chief points of interest are: (1) the good effects of free drainage in relieving increased tension in the subdural space in cerebro-spinal meningitis, and (2) that while this is more perfectly effected by laminectomy and incising the dura mater than by the slighter operation of repeated lumbar puncture, there appears to be some danger lest this free drainage may establish an excessive secretion of cerebro-spinal fluid, analogous to that which Dr. St. Clair Thomson has shown to occur when the cerebro-spinal fluid leaks through the floor of the anterior fossa into the nose.

[16] Lancet, April 1, 1899, p. 889.

INTERSCAPULO-THORACIC AMPUTATION.

Le Conte, in an article on this subject,[17] discusses the various procedures that have been resorted to in interscapulo-thoracic amputation, and gives in detail a new method, limiting his remarks to pathological cases, that is, morbid growths. For the sake of convenience he divides the details of this method into seven steps.

(1) The incision is begun over the sternal end of the clavicle, carried along that bone to about its middle, and then curved downward to the anterior axillary fold. The skin and superficial fascia are dissected up, exposing well the inner two-thirds of the clavicle.

(2) The clavicle is disarticulated by severing its attachments to the sternum and the rhomboid ligament, the clavicular attachment of the sternocleidomastoid muscle is cut close to the bone, and the clavicular portion of the pectoralis major is separated with the finger from the costal portion of the muscle up to the anterior axillary fold.

(3) The clavicle is now pulled upward and out-

[17] Annals of Surgery, September, 1899, p. 289.

ward, and if the subclavius muscle does not readily strip off, its attachment to the first rib is divided. The pectoralis minor will now be well exposed, and it is divided, and the coracoid portion reflected upward with the clavicle. This exposes the axilla fully, and the vessels are seen traversing it from the anterior scalenus muscle down.

(4) The sheath of the vessels is opened and the vein dissected away from the underlying artery. Two ligatures are passed around the artery and tied. The arm is then held up to empty it of blood, while two ligatures are passed around the vein, but these are not tied until the arm is blanched. This renders the use of an Esmarch bandage unnecessary. It must be noted that the cephalic vein has joined the axillary below these ligatures, or else separate ligature of that vessel is required.

(5) The vessels are now severed, together with the brachial plexus of nerves and the costal portion of the pectoralis major. This completes the division of the anterior attachments of the arm.

(6) A posterior incision is now carried from some point on the anterior incision (as near the tumor as it is deemed advisable to go) directly backward and downward to the inferior angle of the scapula, and up again to the posterior axillary fold. The skin and superficial fascia are dissected up for a short distance (half an inch to an inch).

(7) The trapezius is now severed and the transversalis colli or posterior scapular artery secured; the omohyoid muscle is cut and the suprascapular artery secured, and the muscles attached to the inner border of the scapula are rapidly divided close to the bone; then the serratus magnus and latissimus dorsi are cut, the latter at the posterior axillary fold. The arm is now held to the body by the skin of the axilla alone. If there is sufficient flap to cover the wound, the anterior and posterior incisions are joined through the axilla, but if more skin is needed, a flap may be raised from the under surface of the arm. The wound is then closed with suitable provision for drainage.

The author names the following advantages to the procedure just detailed:

(*a*) It gives the widest and fullest possible exposure of the vessels, and decreases the accidents of ligation to a minimum.

(*b*) The disarticulation of the clavicle is simpler, quicker, and easier than a resection of the bone, and the danger of wounding important vessels is less, because these structures are well protected by the sternohyoid and sternothyroid muscles.

(*c*) The elevation of the arm, after securing the artery and before the vein is tied, makes a practically bloodless amputation.

(*d*) The suprascapular and posterior scapular arteries (the only other vessels that can bleed) are easily picked up before being cut.

(*e*) In malignant growths, where the outer end of the clavicle is involved, there is less risk of a return if the entire bone with its periosteum is removed.

(*f*) It removes everything in one piece, a more surgical procedure when dealing with malignant growths.

(*To be continued.*)

Illinois Epileptic Colony. — A bill has passed both Houses for the establishment of an epileptic colony in Illinois.

Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-Seventh Annual Meeting, held at Minneapolis, Minn., October 31 and November 1, 2, and 3, 1899.

(Concluded from No. 22, p. 557.)

Dr. Ernest Wende, of Buffalo, N. Y., presented a report on the

CAUSE AND PREVENTION OF INFANT MORTALITY.

He paid particular attention to the subject of the milk industry, which he said should be under both State and municipal control, operating in harmony under similar principles with the identical object in view, both acting together, forming a system of protection from dairy to consumer. The State should exercise its functions and control until it passes to within the municipal limits and authority, and should include every feature and detail in all aspects of protective sanitation. These features include briefly:

(1) The license system, with fee, periodic systematic inspections, with revoking power and penalties for dereliction; (2) the inspection system should include inspection of herds (tuberculin tests), food, animal care; (3) demand sanitary environment and buildings, correcting existing evils, and examination and approval of plans, pending erection of new ones, which should comply with a standard of sanitary construction with special reference to specific requirements of the business, namely, separate milking and stabling quarters, proper cubic air space, non-absorbent materials; (4) scrutiny of water supply, standard feeding, health of employees, hygienic care of utensils and cans, cleanliness and protection in milking; (5) definite rules governing all procedures, particularly as to the cooling process, preparation for market, and in relation to the varying seasons; (6) the differentiation of the various characters of milk by different colored or shaped cans, and being properly labelled with date of milking, time of shipment; (7) prohibition of milk preservatives and coloring agents, of adulteration, and of the marketing of milk from diseased, sick or parturient cows, of the use of disinfectants, their necessity implying bad sanitation; the prohibition, particularly of refuse or swill food, upon any dairy premises of any food by reason of decomposition or fermentation considered unhealthful, and of the association of other domesticated or housing animals with cows; (9) a standard of quality, with periodic testing and analysis; (10) veterinary inspection with distinction and compensation within and quarantine against the introduction of tuberculous cattle from without the State; (11) it should be as rigid as against pestilence in man, and it is only by this means that the malady can be circumscribed and its bearing on human life favorably influenced; (12) with this standard of supervision by the State, the municipality should continue the supervision upon the same lines and which may be outlined as follows: (*a*) Continuation of the license system with penalties, together with stringent ordinances covering quality, adulteration, sanitary care and relation to contagious disease contamination; (*b*) milk should comply with the State standard as determined by lactometer tests, periodically instituted, as ascertained both in milk houses and on wagons; (*c*)

sanitary non-absorbent milk-rooms, of determined size, air space, ventilation and light; (*d*) with specifically constructed, indirect plumbed cooling and storage boxes, and non-communicating with sleeping rooms, privies, stables or other influencing rooms; (*e*) wagons properly lettered and numbered, with protection from summer heat; (*f*) stringent prohibition regarding intercourse with houses containing contagious diseases, particularly relating to the exchange of milk bottles and the prohibition of refilling of jars *en route*; (*g*) the constant surveillance of contagious disease in relation to milk routes by means of the "tell-tale" register"; (*h*) obligatory cleansing of milk utensils by a uniform method and of cans before returning to the dairy; (*i*) special supervision of and discouragement, if not abolishment, of grocery store and similar character milk sellers, where the business is subordinate to other interests, with a consequent lack of protective facilities; (*j*) until State and city act in unison in this, where interests are identical, the adoption of arbitrary interdiction or destruction at the city line of all milk coming from dairies whose conditions or herds may have a deleterious influence upon the milk; (*k*) systematic system of reports and with mutual warnings and notification of imperilling conditions.

DR. A. G. YOUNG, of Maine, contributed a paper entitled

FORMALDEHYDE AS A MILK PRESERVATIVE.

The results of his examination of all the available printed and other reports regarding the action of formaldehyde seem to justify the following conclusions: (1) That, used as a preservative, it tends at least to impair the nutritive value of milk; (2) its tendency is also to interfere with the digestive processes. In either case it is only a question of dosage, and the limit of safety is difficult to determine; (3) that though the inhalation of formaldehyde gas is much less dangerous than the breathing of the other gaseous agents much used as disinfectants, the results of tests upon animals and of one case of accidental poisoning of a human being indicate that formaldehyde taken into the digestive system may produce dangerous and even fatal results; (4) it would be unwise and unsafe to encourage or to suffer the use of formaldehyde in the public milk supply, even under any possible restrictive regulations; (5) in every State, as there is now in many, there should be a law prohibiting with effective penalties the use in milk of any chemical preservative whatsoever.

SECOND DAY.— AFTERNOON SESSION.

DR. JOHN L. LEAL, of Paterson, N. J., described an epidemic of typhoid fever in that city which was traceable to an infected public water supply.

DR. H. C. H. HEROLD, of Newark, N. J., spoke of the great decline in the mortality rate of typhoid fever since the improved water supply of that city.

DR. GARDNER T. SWARTS, of Providence, R. I., made a favorable report of a four months' test of a mechanical filter plant at East Providence.

DR. H. W. CLARK, of Boston, dealt with the bacterial purification of sewage.

DR. CHAS. V. CHAPIN, of Providence, presented the report of a committee to examine into the existing sanitary municipal organizations of the country which belong to the Association, with a view to report upon those that are most successful in practical results.

The session closed with a paper by MR. W. H. ALLEN, of Philadelphia, on

RURAL SANITATION IN ENGLAND.

THIRD DAY. — MORNING SESSION.

A resolution was offered and adopted, that steps be taken to secure advanced teaching and the giving of diplomas in hygiene, and that recognition of such diplomas be made by sanitary authorities.

Another resolution was adopted, recommending to all governments to set apart such portions of their forests as may be practicable for national parks.

The Association has established a section, known as the Bacteriological and Chemical Section of the American Public Health Association. This section is to meet on the day preceding the meeting of the general Association.

VACCINATION.

DR. WM. BAILEY, of Louisville, narrated some points pertaining to the history of vaccination.

DR. W. C. WOODWARD, of Washington, D.C., spoke of the accidents of vaccination, some of which arose from impure virus, lack of aseptic precautions, etc.

In the discussion, DR. E. LICÉAGA said that revaccination was really unnecessary in Mexico, while in Europe it was imperative because animal virus was used. In Mexico humanized virus is used. His remarks were based on 200,000 vaccinations in the Republic of Mexico.

DR. CABANA, of Massachusetts, referred to an epidemic of small-pox which occurred in Montreal in 1885, in which there were 10,000 cases. He thinks sterilized virus from the animal is preferable to the humanized virus. He referred to syphilis and other diseases being transmitted by using humanized virus.

DR. WRIGHT, of Minneapolis, related his experience during six years' residence on the western coast of the Mediterranean Sea. Humanized virus was used in vaccinating these cases and he knew of no case of syphilis or other disease communicated from one person to another by this method of vaccination.

DR. SAMUEL W. ABBOTT referred to the rarity of cow-pox and believed that infection in most instances is transmitted by individuals rather than by the cows. Very little is known about the remote origin of the infectious diseases.

DR. WM. H. WELCH, of Baltimore, referred to the septic infections that occur at the time of or following vaccination.

DR. PETER H. BRYCE, of Toronto, asked in regard to hypodermic injections of vaccinia, to which DR. W. C. WOODWARD replied that Dr. Kinyoun had tried it in numerous cases with satisfactory results.

DR. CHAS. V. CHAPIN called attention to a report of the New York Board of Health for 1896, in which reference is made to experiments with the subcutaneous inoculation of vaccinia, saying it was not so reliable as inoculation by scarification.

DR. SAMUEL H. DURGIN reported a case in which subcutaneous injection of vaccinia was resorted to, the constitutional disturbance being the same as that observed by the usual method of vaccination. This case was observed some twenty or more years ago.

DR. FREDERICK MONTIZAMBERT, of Ottawa, Can., favored bovine instead of humanized virus, principally for the reason that if syphilis or any other disease

should follow vaccination by humanized virus, the antivaccinationists would have an argument for the condemnation of vaccination generally.

Dr. Chas. F. Roberts, of New York City, also spoke in favor of bovine virus for vaccinating purposes.

Dr. Benjamin Lee narrated an instance in which several members of one family were infected with syphilis by impure virus, the vaccination having been performed in this case by a drummer, not a doctor.

Dr. Jas. F. Kennedy, of Des Moines, Ia., said the president of the Antivaccination League lived in his State, and it is claimed by the antivaccinationists that not only syphilis but tuberculosis is transmitted by bovine inoculation, but he does not think so.

Dr. Louis Laberge, of Montreal, said that with humanized lymph, if proper aseptic precautions are observed, there is practically no danger of transmitting disease.

Dr. Liston H. Montgomery, of Chicago, asked in regard to tetanus following vaccination.

Dr. Cabana reported two cases of tetanus following vaccination.

Dr. Woodward reported another case.

Dr. H. M. Bracken said physicians should take cognizance of the length of time following infection. In two cases of tetanus which he had observed the disease developed on an average of three weeks after vaccination. These persons were very dirty, and he believes the vaccination had nothing to do with the development of that disease.

Dr. H. W. Hill, of Boston, read a paper on

THE OFFICIAL DEFINITION OF DIPHTHERIA.

He said that the first factor in the production of the disease is the patient, and second the bacillus of diphtheria. The disease of diphtheria is existent only when the active diphtheria bacillus producing recognizable lesions is present. The presence of diphtheria bacilli without the production by them of recognizable lesions does not constitute this disease; nevertheless such patients may be a source of possible infection to others. The necessity of isolating persons suffering from the disease, in order to prevent its spread, has long been recognized.

In order to place the matter on a definite basis it is suggested that this definition be recognized by so wording all regulations relating to the supervision of diphtheria that, in so far as may be advisable for the protection of the public health, the demonstration of the presence of the diphtheria bacillus should be sufficient to empower health authorities to proceed with measures directed to prevent its dissemination. He suggested that such phrases occurring in regulations as "persons suffering from diphtheria," or "cases reported as diphtheria," should be modified to read "persons suffering from diphtheria or infected with diphtheria bacilli," and "cases reported as diphtheria or as infected with diphtheria bacilli." It seems to him a simple change of wording will give the necessary power to health authorities, while absolving them from any charge of wrenching terms to suit misunderstood conditions, such as are sometimes, although unjustly, brought forward.

Dr. A. Walter Suiter, of Herkimer, New York, offered the following resolution, which was adopted:

That *Whereas*, the State of New York has taken a decisive step in advance by the grant of an annual appropriation for the establishment and maintenance of a laboratory with all modern appliances for the persistent prosecution of studies in the etiology of cancer; and whereas results have already been obtained which lead to the hope that the discovery of the etiological factor in the production of this much dreaded disease may be attained; therefore, be it

Resolved, That the Association approve of similar efforts to that end, that State and national patronage in special and general scientific research may be universally established.

Dr. H. M. Bracken, of Minneapolis, presented the

REPORT OF THE COMMITTEE ON A NATIONAL HOME FOR LEPERS IN THE UNITED STATES.

He stated that inasmuch as the Congress of the United States had passed a law for the appointment of a commission of medical officers of the Marine-Hospital Service to investigate the origin and prevalence of leprosy in the United States, and to report upon what legislation is necessary for the prevention of the spread of the disease, he would recommend that the committee of the Association be continued to report at the next meeting. He stated that the Ramsey County Medical Society and the Minnesota Academy of Medicine had already taken action urging upon the United States Government the necessity of establishing homes or colonies where lepers can be segregated, thus protecting the general public and at the same time furnishing these sufferers with a comfortable home and suitable medical care.

Dr. U. O. B. Wingate, of Milwaukee, Wis., presented the

REPORT OF THE COMMITTEE TO DEFINE WHAT CONSTITUTES AN EPIDEMIC,

and the following definition was recommended to the Association for adoption: "An epidemic is an outbreak of a communicable or infectious disease, affecting a dozen or more individuals in quick succession before the recovery of the first case, whether arising from a single focus or from several foci in the neighborhood." This definition was not satisfactory to the Association and the matter was therefore referred to another committee to be appointed for the next year.

FOURTH DAY — MORNING SESSION.

Dr. Benjamin Lee, of Philadelphia, presented a paper in which he dwelt upon the

TREATMENT OF GARBAGE AND EXCRETA IN MILITARY CAMPS.

He spoke of flies as factors in the causation of disease. He also referred to the portable furnaces which are now being used by the United States Government at Havana for the destruction of garbage with gratifying results. Two additional papers were presented on waste disposal and its advances.

Dr. C. H. Jones, Health Commissioner of Baltimore, related his experience in the

TREATMENT OF DIPHTHERIA WITH ANTITOXIN AND FORMALDEHYDE,

which showed a great decrease in mortality by the use of these agents. He said that the Health Department of that city has not lost a case of diphtheria which was treated with antitoxin within the first two days of the disease.

DR. C. L. WILBUR, of Lansing, Mich., read the

REPORT OF THE COMMITTEE ON DEMOGRAPHY AND STATISTICS IN THEIR SANITARY RELATIONS.

He stated that with the completion of the work relative to the nomenclature of causes of death, a larger part of the time of the Association should be devoted to other subjects of vital statistics, which have been neglected to some extent in recent meetings. Technical papers, dealing with the best methods of collection, tabulation and presentation of vital statistics, should be presented, but papers of a different class, relating to the employment of vital statistics in practical sanitary administration, should also receive consideration.

Some systematic effort should be made to extend the number of registration States, and to ensure that all States and cities adopting methods of registration shall comply with certain necessary standards of efficiency, which it might well be the province of the authorities connected with the Association to formulate for convenient reference.

Lastly, no efforts should be spared to raise the general standards of vital statistics and to increase their value in the public mind as an absolutely essential part of modern sanitary science, and the basis of public health work. Vital statistics should be systematically taught in our medical schools, with special reference to their practical use by health officers and students of the prevalence of disease. The practical study of mortality statistics is a necessary part of the work of the medical officer of health, and its reputation and character should not be diminished by withdrawing it in any case from medical direction.

The following officers were elected for the ensuing year: President, Dr. Peter H. Bryce, Toronto, Ont.; First Vice-President, Dr. H. M. Bracken, Minneapolis, Minn.; Second Vice-President, Dr. Juan Brena, Zacatecas, Mexico; Secretary, Dr. Chas. O. Probst, Columbus, Ohio; Treasurer, Dr. Henry D. Holton, Brattleboro, Vt.

Indianapolis, Ind., was selected as the place for the next meeting.

Recent Literature.

The Hygiene of Transmissible Diseases: their Causation, Modes of Dissemination and Methods of Prevention. By A. C. ABBOTT, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Illustrated. Philadelphia: W. B. Saunders. 1899.

The most important work of the health officer is the management and control of infectious diseases. By the aid of a thorough knowledge of the natural history of this class of diseases, any sanitary authority will be better equipped for the work of preventing their spread, whenever they occur in any community. The systematic and thorough method employed by the author in his treatment of the subject of transmissible diseases makes this volume a very valuable work, not only for the student of hygiene, but for every one who has to deal with this most important department of sanitary work.

The first chapter or section treats of the different circumstances which act as predisposing conditions in the causation of disease — age, sex, race, occupation, density of population, heredity and season of the year. Exciting causes are classed as chemical, physical or mechanical, animal parasites and bacteria. The author gives an unusually clear definition of the distinction between the terms *contagious* and *infectious*.

The second chapter treats of the causation, modes of transmission, and prevention of thirty different specific diseases of the infectious class, each disease being considered separately in a systematic manner. Under the head of typhoid fever we note his clearly stated opinion that "there is no evidence that the disease is disseminated through the air"; and under diphtheria, "neither is there any evidence, though opinion in abundance, that the disease is spread through the air of drains and sewers." Once having occurred in a house, however, he admits the possibility of its spread by "defective plumbing, when there is a direct passage for the infective materials thrown into closets and sinks."

The final chapter treats of the important subject of disease prevention, including isolation, disinfection, quarantine and the various methods of producing immunity.

The Phonendoscope and its Practical Application. A Translation of Lectures Delivered by AURELIO BIANCHI, M.D. By A. GEORGE BAKER, A.M., M.D. Philadelphia: George P. Pilling & Son. 1898.

Beside Dr. Bianchi's lectures the book contains translations of special articles on the use of the phonendoscope by Drs. Felix Regnault and M. Anastasiades. It is published by the sole agents for the sale and manufacture of the instrument in the United States, and appears to be a perfectly proper effort to popularize its use and increase its sale. The possibilities of the phonendoscope as set forth by its inventor are certainly marvellous, and almost incredible to one whose patient efforts to attain similar results have always been disappointing. By its use, among other things, "you can readily distinguish the beginning of the lung, its divisions into lobes and the overlapping of the same," and can "determine the exact size and boundaries of the heart, its division into ventricles and auricles, and the position of the large vessels." The work of the translator has been wretchedly done.

Asthma; Recent Developments in its Treatment. By ERNEST KINGSCOTE, M.B., C.M., etc. With colored frontispiece and illustrations. London: Henry J. Glaisher. 1899.

The point of view of the author can best be given in his own words, that "although he does not state that every case of asthma has a dilated heart, he does say that every case he has examined has had one; and further that he would have been unable to diagnose the state of the heart owing to the concomitant emphysema without the aid of his pleximeter," and that "personally he has seen a great number of cases (of hay fever), every one of whom suffered from a cardiac dilatation, on the reduction of which the tendency to hay fever invariably disappeared." The pleximeter, a description of which is given, would seem to be a rather remarkable instrument, since it shows that it is "not at all an uncommon condition" for a heart to be dilated "to the size of a small foot-ball," weighing "about as much as half a bucket of water." Perhaps

the author's language is simply picturesque. Although the impression is given that he is more inclined to fit the facts to a theory than a theory to the facts the book deserves attention as the work of a man who has given much thought to the subject. It brings out many interesting points in a disease whose etiology is often obscure and whose treatment is often unsatisfactory. A very considerable portion of the volume is devoted to the subject of cardiac dilatation, in the treatment of which the Schott method is warmly recommended.

Railway Surgery. A Handbook on the Management of Injuries. By CLINTON B. HERRICK, M.D., Troy, N. Y., Lecturer in Clinical Surgery, Albany Medical College; Attending Surgeon to the Troy Hospital and the House of the Good Shepherd; Consulting Surgeon to the Leonard Hospital, etc. New York: William Wood & Co. 1899.

We have often wondered why some one did not write a work on railway surgery, but it is a book that we expected would be written by some surgeon in charge of one of the great systems of railways in the West. The author, however, has met a want and has done it in a very satisfactory manner. There can be but little doubt that eventually all railways will find it to their advantage to employ a permanent staff of surgeons, not alone to treat the emergencies and accidents that arise in transportation, but to advise and direct them as to the responsible care of the health of their patients. The chapter on Car Sanitation and Disinfection is one that should be read by every "master of transportation." The printing of the book is fair and some of the illustrations are excellent. We can commend the book to any one who has to do with railway surgery.

A Treatise on Human Physiology, for the Use of Students and Practitioners of Medicine. By HENRY C. CHAPMAN, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia. New (second) edition, thoroughly revised. Pp. 921. Philadelphia and New York: Lea Brothers & Co. 1899.

The writer offers this second edition of his text-book to the public unchanged in any essential respect. The chapters on physiological chemistry and the functions of the nervous system have, however, been largely rewritten in accordance with the recent rapid advances in our knowledge of these departments of knowledge. There has of late been a certain excess of text-books on physiology, but they receive a possible justification from the fact that they are often used by the authors, who are also teachers, for purposes of instruction in their own classes.

In this edition the author has devoted over two hundred pages to a consideration of the nervous system, including a certain amount of anatomy, as the necessities of explanation demand. It is needless to say that the newer theories and facts relating to the structure of the nervous system are considerable, and perhaps as needless to add that they are treated in rather too cursory a manner to be of great value. We are a little sorry to see a reproduction of Ferrier's well-known diagram of cortical areas on page 673, which certainly gives to the student a wrong conception of the significance of cerebral localization. The diagrams on the following page are much to be preferred.

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A BACTERIOLOGICAL AND CHEMICAL SECTION OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

ON the day before the annual meeting of the American Public Health Association, held this year at Minneapolis from October 31st to November 3d, a meeting of the so-called Laboratory Committee of the Association was held in the Laboratory of Medical Sciences of the University of Minnesota.

This movement to group together laboratory workers, although in abeyance for some years, was practically begun five years ago at the Montreal meeting of the Society, when the Committee upon the Pollution of Water Supplies of the main Association obtained the authority of the society to hold a convention of bacteriologists, to discuss the various bacterial methods in use in different laboratories, in order to compare notes and to reach an agreement, if possible, upon certain essential elementary matters pertaining to bacterial work. This meeting was held at the Academy of Medicine in New York City during June, 1895, and brought together for the first time very many of the prominent bacteriologists of the country.

The meeting was presided over by Dr. W. H. Welch, of Johns Hopkins University, and the many interesting papers read at the meeting and the discussions of them are presented in the *Journal of the American Public Health Association* for 1895. The meeting at that time was chiefly valuable as showing the great divergence in methods used by different bacteriologists, and their apparent inability to agree upon standard media and standard or uniform methods of work. This result was to be expected, however, owing to the recent and rapid development of the science of bacteriology. From the time of this meeting practically nothing further was done in the way of following up this line of work or organizing laboratory workers of the class spoken of into any sort of an association, until about a year ago, when, largely through the efforts of Dr. Wyatt Johnston, of Montreal, new life was imparted to the movement, and the so-called Lab-

oratory Committee of the American Public Health Association — comprising both chemists and bacteriologists, was formed with approximately sixty members. This was really an independent movement, with only a semi-official sanction by the Association, and many of the members joining this committee were not, at the time of joining, members of the main Association. In fact, many of the men who were this year and will hereafter be brought together in this way, while interested in a general way in the work of the Public Health Association, have not in the past felt drawn particularly towards it because of the very general nature of the papers read before the Association. For this reason alone it would seem that the formation of this Laboratory Committee cannot fail to be of advantage to the Association, and to many new and earnest members.

Through the efforts of Dr. Johnston and his associates, a well-attended and successful meeting of the Committee was held in the Laboratory of Medical Sciences of the University of Minnesota, as above mentioned, upon October 30th. The meeting was called to order by Dr. Welch, who again acted as chairman, as at the meeting in 1895. Dr. Welch opened the meeting with an address in which he called attention to the great benefit that would result from bringing together, in the way proposed and there exemplified, chemists and bacteriologists interested in public health work, as a section of the regular Association, and he further spoke of the lines of work that the section would find most valuable to consider. He spoke in the first place of tuberculosis, which is one of the most, if not the most, important problems of physicians when one considers that it is the most fatal of all diseases of the human race. Amongst other things, he suggested investigations with reference to the amount of danger resulting from infection from cattle, stating that the general ideas upon that subject showed great discrepancies, some minimizing the danger, others doubtless exaggerating it. He spoke also of typhoid fever and the lamentable experiences during the recent war and the lessons to be derived from the mistakes in diagnoses of cases and the absence of the application of hygienic principles, etc. The problem of disinfection he also touched upon, and the dissatisfaction at present with the procedures now in vogue. The subject of sewage disposal was also mentioned in his address, and the great promise of the natural methods now being studied in this country and in Europe. As to broader biological questions, he stated that there is the important and perplexing subject of differentiation of bacteriological species. With reference to the hog cholera group, for instance, after finding the properties of an organism and apparently identifying it, he asked if the bacteriologist could say with certainty that it is the hog cholera bacillus. Can anything more be said than that it belongs to that group, and is not the same thing true of the colon group and of the typhoid group?

Following Dr. Welch's address many papers were read, most of which were upon bacteriological subjects, and interesting discussions followed the presentation of each group of papers. The papers were all upon matters of considerable interest to the bacteriologist at the present time and the titles of them were as follows: "Studies upon the Distribution of Certain Varieties of Diphtheria Bacillus"; "A Streptothrix Form Isolated from Water, Resembling Diphtheria Bacillus"; "Branching Diphtheria Bacilli"; "The Significance of Gas-Producing Bacteria of Non-Colon Type in Sanitary Analysis"; "Bacterial Water Analysis"; "Some Points on the Differentiation and Classification of Water Bacteria"; "The Question of Standard Methods for the Differentiation of the Numbers of Bacteria in Water"; "The Observations of Odor as an Essential Part of the Water Analysis," etc. Two papers upon chemical subjects were also presented, being "The Iodometric Determination of Small Quantities of Carbon Monoxide," and "The Action of Water upon Lead."

The papers relating to the diphtheria bacillus were of much interest, especially that by Dr. Wessbrook upon "The Distribution of Certain Varieties of the Diphtheria Bacillus." In this paper Dr. Wessbrook presented the results of an extended study of organisms taken from the mouth or nose of 263 children in health, these children all attending one school. As a result, 25 per cent. showed no diphtheria-like organism in the nose or throat, while the remainder, or 75 per cent., showed the nose and throat infected. The frequency of occurrence of the two groups of diphtheria bacilli observed in the children and the inability, as stated by him, to free their throats of bacteria which produce little effect upon their health, led to a careful study of the morphology of the bacilli, as described in his paper. The diagnosis of diphtheria has become such a common thing, as he stated, and is carried out by municipal and other laboratories so frequently, that all workers have probably about the same ideas in regard to what constitutes the diphtheria bacillus. The danger of making the mistake of overlooking a diphtheria bacillus when it is present is extremely small; but, in the study of the possible means by which diphtheria may be spread, the fact that it remains dormant for a long time and then appears to break out is of great importance, and it is perhaps by the study of people who are not at the time infected, though they may be associated with cases, and also the study of apparently healthy children where no epidemic exists at the time, that is to help us in this particular, where many cultures are handled, of determining amongst the various forms what are really pathogenic diphtheria bacilli.

It will be noticed that many of the papers read dealt with the determination of bacteria in water, both qualitative and quantitative, and the importance of this branch of sanitary work, in connection with the examination of public water supplies, etc., is well illustrated by the fact that 75 per cent. of the papers presented at this meeting were upon studies along

this line of bacteriological and chemical work. The question of the proper media for the cultivation of water bacteria and the proper degree of reaction of the media, and the desirability of uniform methods of procedure in different laboratories, was again discussed in a most interesting manner. A study of the classification of water bacteria and its importance was presented in an interesting way, and also the desirability of formulating, if possible, standard methods of procedure for isolating the colon bacillus and its allied forms, as this is one of the most important bacterial determinations that the working sanitary bacteriologist has to deal with when analyzing a suspicious water at the present time. The colon bacillus can without doubt be isolated if present in a water supply, and data upon its presence in various supplies, its numbers in a given volume of water from a supply, the relation that it bears to the total number of bacteria present, etc., will be of increasing value to those dealing with water-supply problems. Especially will the significance of its appearance be of value to those under whose direction a polluted water supply is filtered before passing to the consumers.

The subjects touched upon at the meeting in Minneapolis were only a few of the many important questions now coming to the front in public health laboratory work, and of course only one or two of the papers can be mentioned here. It can be said, however, that the subject of standard methods of analyzing water, both chemical and bacteriological, was considered of enough importance to cause the appointment of a committee to study and report upon the subject to the section, and this is only one of many committees upon like subjects that will be appointed if the laboratory movement is a success and the meetings continue.

It was found to be impossible to consider this meeting as that of a regular section of the main society, as the proposition to form a section, while meeting a favorable reception from the Association, cannot be voted upon until the ensuing annual meeting. An organization was formed, however, and the name "The Bacteriological and Chemical Section of the American Public Health Association" was adopted. A chairman, secretary and executive council were elected, the Chairman for the ensuing year being Dr. Theobald Smith, of Harvard University, and Pathologist of the Massachusetts State Board of Health; the Secretary, Dr. Wyatt Johnston, Bacteriologist of the Board of Health of the Province of Quebec; Recording Secretary, Dr. A. Gehrman, Bacteriologist of the Chicago Board of Health; and the Council of five members, consisting of Dr. W. H. Welch, of Johns Hopkins University; Dr. H. L. Russell, Bacteriologist of the State Board of Health of Wisconsin; Mr. H. W. Clark, Chemist of Massachusetts State Board of Health; Dr. J. Ramirez, of Mexico, and Dr. Gardner P. Swarts, Secretary of Rhode Island State Board of Health. This is a very strong body of men, and should mean good work in this department of research.

LEGISLATION FOR THE ARMY MEDICAL SERVICE NEEDED.

On another page will be found a bill to be submitted to the present Congress by Surgeon-General Sternberg, looking to an increase in the personnel of the Medical Department of the Army, and we desire to call the attention of the medical profession to the urgent necessity for legislation in behalf of that department in the military service. This bill calls for the addition of 124 commissioned officers, an estimate which appears to be extremely moderate in view of the fact that there are now only 192 commissioned medical officers in the army, while the actual needs of the service are such, as regards medical attendance, that there, are, in addition, more than 400 civilian physicians serving with the colors, under contract.

Surgeon-General Sternberg has in the past repeatedly called attention to the fact that the number of medical officers, as authorized under existing law, was insufficient for an army of 25,000 men under the peace conditions existing prior to the war with Spain; and during the past two years a large number of posts have been established upon the seaboard of the United States, in Puerto Rico, in Alaska and in the Hawaiian Islands, which will presumably be permanently garrisoned hereafter. With the recent improvement in our coast defences, no less than 18 new posts, where troops are now stationed, have been established in the Department of the East alone; and in the Department of the Columbia, including Alaska, there are 10. The number of independent garrisons in Puerto Rico at present is 11; the number of independent commands in Cuba is 30. At the present time there are stationed in the Philippine Islands, or under orders therefor, no less than 52 medical officers of the regular army, 23 surgeons of volunteers, 75 regimental surgeons and assistant surgeons of volunteer regiments and 157 acting assistant surgeons — a total of 307. How many medical officers may be required for duty with troops constituting the permanent garrisons of these islands it is impossible to say at the present time; but there can be no doubt that even if the modest number of commissioned medical officers asked for in this bill is authorized by Congress it will still be necessary for many years to come to employ a considerable number of contract surgeons to meet the requirements of the service.

The second recommendation in the surgeon-general's bill directly affects the efficiency of the medical service. It has formerly been customary to commission candidates upon the attainment of the required average before the examining board, and without that insight into their character and aptitude for the service which can only be gained through extended observation and personal contact. With a probationary period of six months it is believed that men of undesirable personality, or such as appear not likely to maintain the professional reputation of the medical corps, can be more thoroughly excluded from the service.

The last section of the bill recommends that such medical men as have satisfactorily served their country, either in the volunteer service or as contract surgeons, shall, if possessed of the necessary qualifications, be made eligible for immediate appointment — under existing laws medical officers of the volunteer service being entitled to be graded at the head of their entering class and to have their volunteer service count for their promotion to the rank of captain. It is certainly just and proper that such men should have the way opened to them to obtain commissions, and it is evident, as experience with the contract surgeon system, as exhibited in the letter from a Washington correspondent, proves, that those medical men who would be the most desirable acquisition to the service cannot afford to remain indefinitely under a contract which may terminate at any moment and which affords no prospect of advancement.

The personnel of the medical corps is not only small in numbers but lacking in that political "push" through which legislative reforms are brought about. It stands alone in the military service without share in the rewards and preferment so freely bestowed upon other departments, either neglected or the target for ill-directed censure, satisfied to deserve well of the profession it represents. It asks no favors and wishes but justice. That its needs are positive and that present conditions are productive of inefficiency cannot be gainsaid, and it is equally true that the institution of measures for its relief lies in large measure with the medical profession in civil life. It becomes, therefore, the duty of the latter to support the surgeon-general in his efforts to improve present conditions, not only by tacit approval but by active measures calculated to show Congressional legislators that the medical profession as a whole fully appreciates the requirements of the Medical Department of the Army, and earnestly desires that they be satisfied. The medical men throughout the country can force the adoption of such reasonable measures as are proposed, and any apparent indifference on their part will furnish a most potent argument for the defeat of the bill to those who place partisan politics above the public welfare. We strongly urge that the profession throughout the country take the interests of the army medical service to heart and, through the formal action of medical societies as well as by brief personal letters to their Congressional representatives at Washington, exhibit an emphatic desire for the passage of the proposed bill.

AMERICANS AND ENGLISHMEN AS WELL AS ITALY, FOR THE ITALIANS.

It appears that the Italians are making a vigorous attempt under the leadership of a Signor Santini to prevent the practice of English physicians among their countrymen sojourning in Italy. It is the same lament that has from time to time gone up in Paris relative to the invasion of foreign physicians drawn to it by the constantly increasing number of travellers and permanent foreign residents. For an American or an Englishman to desire a physician who speaks his language and understands his ways, in whatever part of the world he may happen to be, is both natural and commendable, and no doubt he will persist in his desire, however unwelcome his choice may be to his temporary hosts.

The question has apparently reached something of a crisis in Italy, with the renewed introduction of a bill known as the Santini Bill into the Legislature, providing for an obligatory Italian qualification on the English-speaking practitioner, which practically means that English-speaking people, while in Italy, must be content with the services of Italian physicians. Previous attempts to make this bill a law have failed, a fate which we trust may also befall this last effort. The influx of English and American tourists into Italy is enormous and, no doubt, increasing each year, which means a corresponding expenditure of money, a sum estimated seven years ago at £20,000,000 sterling, almost one-third of the Italian revenue. It is perhaps not to to be wondered at that Italian doctors, being human, should wish to divert a part of this money to their personal uses. To take legal measures to that end is, however, quite unworthy of the profession to which they belong, and altogether inconsistent with the manifest rights of the individual to choose whom he wishes as his medical adviser; it is, moreover, likely to prove unacceptable to the Italian hotel-keeper and other native purveyors, as well as injurious to the Government railways, etc. It is not probable that the Italian Legislature will deliberately divert the stream of American and English travel; without it, Italy would be a much less desirable place for the Italians.

MEDICAL NOTES.

INOCULATION OF TROOPS AGAINST TYPHOID FEVER. — About 70 per cent. of the British troops sent to the war in South Africa have been inoculated against typhoid fever according to the method of Professor Wright, of Netley.

CUI BONO DOCTORES? — With the above query, a somewhat malicious layman sends a newspaper account of a female evangelist's being raised from the dead by a reverend gentleman who had need of her. He explains that he performed the act with all proper deference to an overruling Providence; and she explains that she was dead because she knew she was — not because she had previously had a doctor.

A MEMORIAL TO DR. WILLIAM H. WELCH. — Following the German custom it is proposed to publish a memorial volume in commemoration of Dr. Wm. H. Welch's twenty-fifth year as a teacher and investigator. The circular of announcement states that during the past twenty-five years some seventy-five persons have undertaken investigation under Dr. Welch's

leadership and nearly half of these will contribute to the volume. The book will contain contributions to pathology and correlated sciences; the edition will be limited by the number of subscribers. All communications and subscriptions should be addressed to Dr. F. P. Mall (Secretary of the Committee of Publication), Johns Hopkins University, Baltimore, Md.

Appointment of Dr. Joseph Sailer. — The appointment of Dr. Joseph Sailer as assistant pathologist to the University of Pennsylvania Hospital has been announced.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the eight days ending at noon, December 6, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 82, scarlatina 45, measles 38, typhoid fever 15.

Five New Cases of Small-Pox in Chelsea, Mass. — Five new cases of small-pox have recently been discovered in Chelsea. The Board of Health has begun an investigation to trace the origin of the disease.

Two Centenarians. — Timothy McDonald, of Greenfield, Mass., is reported to have died recently at the age of one hundred and three years. Mrs. Mary Peters, of Henniker, N. H., who has died within a week, is said to have attained the age of one hundred years and eleven months.

NEW YORK.

Infectious Diseases from Immigrants. — On returning from his recent trip to Europe, Health Officer Doty stated that his observations there convinced him that the reports of danger of infection from Russian immigrants, which constitute a large proportion of those arriving at the port of New York, had been greatly exaggerated. He found that when emigrants from Russia start for this country they are first examined in their own towns. They are then passed across the frontier to one of six stations, and at these places another inspection occurs, and frequently the people are thoroughly fumigated as a precaution. From these stations they are sent to what is called a "control station" near Berlin, in Germany. There they are inspected once more, and if they again pass muster they are allowed to proceed to the port of embarkation. At the ports they are compelled to submit to still another inspection, this time under the auspices of the steamship companies. This last inspection, said Dr. Doty, is the most severe of all, as the companies are anxious not only to guard against contagious and infectious diseases, but also against the other diseases which debar an immigrant from being allowed to land here, as they know that they will have to carry back immigrants thus affected at their own expense. Usually the intended immigrant is kept by the steamship company in a lodging-house from three to five days to see if any disease develops.

ARMY AND NAVY NOTES.

Dengue in Cuba. — From Cuba also, as well as Luzon, the report comes that dengue has existed to a considerable degree, particularly among the United States troops.

Hospitals at Havana. — Owing to the lessened amount of sickness among troops at Havana the large Military Hospital No. 1, formerly the Alfonso XIII hospital, has been ordered turned over to the city authorities as a civil hospital. This institution, of a capacity of 2,000 beds, was largely renovated on the occupation of Cuba with the expectation that disease would prevail to a greater degree among our troops than has fortunately been the case. The smaller Las Animas Hospital has also been closed and hereafter the sick will be sent to the large hospital at Camp Columbia, at Quemados, several miles from Havana.

Investigation of Tropical Diseases at Manila. — Dr. E. R. Hodge, pathologist at the United States Army Medical Museum, Washington, D. C., has recently left for Manila for the purpose of securing that institution such pathological specimens as may result from active hostilities and the occupation of a tropical country; he is also empowered to purchase any articles relating to the practice of medicine or surgery which might be of value to the Museum. Dr. Hodge will have his headquarters at the First Reserve Hospital in Manila; making such trips into the surrounding country for material as may appear to be of advantage. He goes equipped with a complete outfit for the preservation of specimens and will remain in the Philippines for at least a year. This innovation in having a trained representative of the Museum on the spot will undoubtedly result in the accumulation of a large amount of valuable material and data which would otherwise have been lost to science. An expedition to the Philippines for the investigation of tropical diseases and the acquirement of museum specimens was planned some time since by Surgeon-General Sternberg, but owing to recent reports from Manila, which indicate that the insurrection is liable to collapse at any time, it was deemed advisable to send Dr. Hodge in advance. It is understood that the remainder of the party — which includes several expert bacteriologists — will leave Washington about the beginning of the year.

Arrival of Hospital Ship "Missouri." — The hospital ship *Missouri* arrived safely at Manila, *via* the Suez canal, on November 29th.

The Wounded at Puerto Cabello. — The Surgeon-General of the Navy is in receipt of a report from Dr. W. C. Braisted, Surgeon U. S. Navy, with regard to the assistance given the wounded at Puerto Cabello, during the recent revolution in Venezuela. Of the character of the wounds Dr. Braisted writes: "The majority were compound fractures of long bones. The rifles used were mostly Mausers, but the ammunition was generally not the regulation Mauser bullet but a softer leaden bullet that flattened out on impact

and produced a most remarkable amount of disintegration of soft and hard tissues. The wound of entrance corresponded to the size of the missile, or was a little larger, while the wound of exit was very large and ragged."

GEN. LEONARD WOOD, M.D. — Gen. Leonard Wood has recently left Santiago, under orders from the War Department, to visit Washington. It is generally believed that this action is taken in view of an intention on the part of the President to appoint General Wood as the civil governor of Cuba in the new administration of the island. With reference to the report that General Wood was destined to succeed Surgeon-General Sternberg, on the statutory retirement of the latter, as head of the Medical Department of the Army, General Wood, we are informed, authorized the statement that he had not been offered the position and that he would not accept it under any circumstances. To emphasize his statement he is reported to have dictated the following: "My relation with the Medical Department of the Army so far as any further duty in the medical corps is concerned is at an end, and whatever duty I may perform in the army in the future will be solely in the line." General Wood has been repeatedly mentioned as one of the more prominent candidates for the position of brigadier-general in the regular army — a postion of which his undoubted military ability and excellent administration of affairs at Santiago prove him fully capable of satisfactorily filling. His candidacy, however, is meeting with the united opposition of the line, who look on such positions as the perquisites of their branch of the service and who fully appreciate that the comparative youthfulness of General Wood, should he be made a brigadier-general in the line, would undoubtedly place him in command of the United States Army for many years. His former associates in the medical corps would all be glad to have him promoted; first because he has fairly earned the position of brigadier-general in the regular army; second, because as a general officer, ultimately commanding the army, he would be in a position to be of powerful assistance to the Medical Department, whose needs he knows and a decade of service in which he can never forget.

Miscellany.

ARMY MEDICAL BILLS.[1]

BILL FOR THE INCREASE OF THE MEDICAL DEPARTMENT OF THE ARMY.

BE it enacted by the State and House of Representatives of the United States of America in Congress assembled,

SECTION 1. That there shall be added to the number of medical officers of the army now authorized by law, four assistant surgeons-general with the rank of colonel, ten deputy surgeons-general with the rank of lieutenant-colonel, thirty surgeons with the rank of major, and eighty assistant surgeons with the rank of first lieutenant, who shall have the rank of captain at the expiration of five years' service as now provided by law. Provided that the original vacancies created by this act in the grade of colonel, lieutenant-colonel and major shall be filled by seniority promotion in accordance with established laws and regulations.

SECT. 2. Hereafter candidates for appointment in the medical corps of the army who pass a medical examining board in compliance with existing regulations shall be appointed acting assistant surgeons for a probationary period of six months; during this probationary period they shall attend the Army Medical School established at the Army Medical Museum in the city of Washington, and the faculty of the Army Medical School shall report to the Secretary of War at the end of the prescribed course of instruction upon the fitness and relative standing of the probationary candidates; those who are recommended by the faculty may then be commissioned by the President to fill existing vacancies in the medical corps of the army.

SECT. 3. Acting assistant surgeons appointed in accordance with the provisions of Section 2 shall be paid $100 per month and shall not be entitled to any allowances or to mileage in reporting for the prescribed course of instruction, or in returning to their homes if they are not recommended for a commission.

SECT. 4. The number of acting assistant surgeons appointed in accordance with the provisions of Section 2 shall not exceed the number of vacancies existing or to result from retirements during the probationary period.

SECT. 5. Candidates who have rendered satisfactory service as acting assistant surgeons or as commissioned medical officers in the volunteer army of the United States for a period of six months or more, shall be exempted from this period of probation and may be commissioned at once if vacancies exist and they pass a satisfactory examination as to their physical, moral and professional qualifications.

BILL FOR THE RELIEF OF ACTING ASSISTANT SURGEONS IN THE UNITED STATES ARMY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. That on and after the passage of this Act acting assistant surgeons in the army of the United States shall have the same rights and privileges as regards leaves of absence as commissioned officers of the army.

SECT. 2. Acting assistant surgeons in the army of the United States who have been appointed since the first day of May, 1898, who have been absent from duty, by proper authority, on account of sickness contracted in the service, shall be paid for the time of such absence at the rate per month specified in their contracts.

BILL FOR THE RELIEF OF ASSISTANT SURGEONS WITH THE RANK OF CAPTAIN IN THE VOLUNTEER ARMY OF THE UNITED STATES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That assistant surgeons in the volunteer army of the United States commissioned by the President as captains, in accordance with the provisions of an Act for increasing the efficiency of the army of the United States and for other purposes (approved March 2, 1899), are entitled to the pay of a "captain mounted" from the date of their acceptance of such commission as prescribed by law.

[1] Three bills to be submitted by Surgeon-General Sternberg to Congress, at its coming session.

IS NAIL-CUTTING A SURGICAL OPERATION?

SOME time ago, according to the *British Medical Journal*, a German court had to adjudicate on the question whether corns constitute a disease. A still more abstruse problem has recently engaged the attention of a Vienna tribunal. A medical practitioner of that city, having occasion to operate, very properly trimmed his nails as a preliminary. In doing so, however, he cut his finger, but was nevertheless able to

perform several operations on the same day. The wound became infected, and the practitioner himself had to be operated on. He was thus disabled for twenty-one days, and therefore claimed five florins a day from an accident assurance company. The company repudiated liability, on the ground that, according to its by-laws, no claim can be entertained for an operation performed by a medical practitioner on himself. The question whether nail-cutting is a surgical operation appears to have proved too much for the judicial intellect, for, after hearing arguments on both sides and suffering much vexation of spirit, the court reserved its decision. We do not presume to offer any help towards the solution of so subtle a question. We venture, however, to submit that, if nail-cutting comes withtn the sphere of operative surgery, *a fortiori* shaving must do so, for that procedure was once among the duties of a surgeon. So well was this recognized in some countries that at the beginning of the present century some English surgeons were summarily dismissed the Danish Naval Service for refusing to act as barbers to the crews of their ships.

Correspondence.

THE ARMY RATION.

WASHINGTON, December 4, 1899.

MR. EDITOR: — Articles have appeared recently in the public press criticizing the army ration, denouncing its unsuitability for troops in a tropical climate and urging a radical change in its character. These articles are based on the elementary propositions that while fatty foods are good where a high development of animal heat is required, they are harmful in a climate where there is no call on the system for a large heat production. Every reader is willing to grant these propositions. They are simple and can be verified every summer and winter by the inhabitants of the north temperate zone. There are 12 ounces of bacon in the army ration and this is no doubt an excess of fat for a dietary in the tropics. But it does not follow that the army ration should therefore be changed. The critics who see so clearly that the ration should be altered to suit their views of what is right and proper to be eaten in tropical climates and who are astounded at the dulness of those army officials who think it wise to be slow in doing anything of this kind, do not appear to know that the army ration is run on a broader gauge than the elementary propositions which form the basis of their argument.

There is in the army of the United States a considerable difference between the ration of the soldier and the diet of the soldier. The critics of the army ration do not understand this. The ration is the allowance for subsistence of one person for one day. The diet is what is actually prepared in the kitchen for consumption by the soldier day by day. The ration is prescribed by law and consists of the meat, the bread, the vegetables, the fruit, the coffee and sugar, the seasoning and the soap and candle components.

The meat component does not consist of fat pork or bacon, as those who know nothing of the domestic economy of army kitchens appear to believe. On the contrary, there is some variety in the meat component. It consists of 20 ounces of fresh beef, *or* 20 ounces of mutton when the cost does not exceed that of beef, *or* 12 ounces of pork, *or* 12 ounces of bacon, *or* 22 ounces of salt beef, *or* 14 ounces of dried fish, *or* 18 ounces of pickled fish, *or* 20 ounces of canned salmon, *or* 18 ounces of fresh fish.

The bread component consists of 18 ounces of flour, with baking powder when the men have to bake their own bread, *or* 18 ounces of soft bread, *or* 16 ounces of hard bread, *or* 20 ounces of cornmeal.

The vegetable components consist of 2⅔ ounces of beans, *or* 2⅔ ounces of pease, *or* 1⅔ ounces of rice, *or* 1⅔ ounces of hominy AND 16 ounces of potatoes, *or* 12½ ounces of potatoes and 3½ ounces of onions, *or* 11½ ounces of potatoes and 4½ ounces of canned tomatoes, *or* 4½ ounces of other fresh vegetables, not canned, when they can be obtained in the vicinity or transported in a wholesome condition from a distance.

The fruit component consists of 2 ounces of dried fruit, such as prunes, peaches, or apples. The other components consist of coffee green, or coffee roasted, *or* tea green or black, *and* sugar, *or* molasses, *or* cane syrup; vinegar, salt and black pepper, and to these are added the soap and candle components.

The slightest knowledge of practical cookery will enable any one who reads what I have just written to form an idea of what may be called the flexibility of the army ration. The soldier in the tropics is not called upon to eat his twelve ounces of bacon *or* go hungry. That *or* is not to be found in the regulation statement of the meat component of the ration, although there are more than half a dozen other important *ors* in it. And there is variety also in all the other constituents except the soap and candle components.

If the scientist will calculate the elementary constitution of any one of the various diets which may be formed from the flexibility of the army ration, he will find that there is a sufficiency of nitrogen and carbon in each to support the system of the soldier under the heaviest strain of work and exposure. If the proximate principles be calculated it will be found that many variations may be made in the relative proportions of proteids, hydrocarbons and carbohydrates. But more than all this, we *know* that the soldiers of the United States have never gone hungry on their full ration.

Granted then that the ration suffices to sustain the system in the cold of a Montana blizzard, will any one suggest its insufficiency for nutritive purposes where there is little call for physiologic fuel to keep up the animal heat? No, but, says the critic, for whose information I am writing, there is too much of the hydrocarbons, too much bacon in the ration to make it a suitable ration for tropical climates. Too much bacon! Too much candle! There is a candle component in the ration, but the soldier is not called upon to eat it. Nor is he required to eat the bacon if he does not desire to do so.

This leads me to refer to the elasticity of the ration. Its flexibility has already been referred to; but its elasticity also is wonderful. It is so elastic that the soldier may verily eat his candles if he does not require them for other purposes. He may leave the candles in the hands of the subsistence department and if their money value will pay for a can of peaches, or a pound of rice, or so much of any other of a long list of articles kept for sale by the subsistence officers, he can eat his candle component in the form of peaches and rice or any of the other purchasable things. So with the bacon. He is no more required to eat that because it is part of the ration than he is required to eat the candles, but he may transform it into some other article of food which he likes better or which is better for him under the climatic conditions which affect him at the time. So, indeed, with all the other components of the ration, excepting only the fresh vegetables, fresh bread, baking powder and dried fruit. Even the fresh beef component may be reduced in quantity and the money value of the quantity not issued for use may be drawn in other articles of sales.

There is even a greater elasticity than this to the ration, for the money credit for components not drawn and used may be applied to the purchase of articles from outside sources, articles not kept for sale by the subsistence department. Thus in probably every company and post messhall in the United States on Thursday, November 30, 1899, there was turkey with cranberry sauce on the table, representing so much bacon and other articles of the formal ration not drawn in kind and used, but left in the hands of the subsistence department and placed as a cash credit

for the payment of turkeys and cranberry sauce or of any other purchases to vary the diet of the soldier. If at any of the posts they did not have turkey and cranberry sauce on that day it was because these things were impossible there, but they no doubt had an excellent dinner all the same.

Under the present law and regulations as to the ration the soldier can have any variation of his diet within certain money value limits which his officers consider necessary for his well-being. His ration is fixed by law and it is a most liberal one; but his dietary depends upon the intelligent supervision of company officers and the ability of the company cooks. I have stated the law and regulations concerning the ration and its flexibility and elasticity, and the subsistence department may be depended upon to provide the articles necessary to vary the diet. If a change in the dietary is advisable it lies with the company commanders to carry it into effect. If the change is desirable on medical grounds, medical officers should communicate their views to these responsible officers and the change can be effected without difficulty. There is no need to talk about changing the ration to effect a change in the dietary.

But it may be said, Why not go a step further and reduce the ration to simpler terms? Why not make it a money value instead of so much of this, that and the other component? A money value to be of equal value at all military stations would have to be a different value to every station. A dollar is worth nothing from the point of view of the ration if there is not a bite of anything within its purchasing radius; but to the stomach of a hungry soldier 20 ounces of fresh beef, 12 ounces of bacon, etc., have a fixed value and when the subsistence department is charged with providing these articles the soldier will fare much better than if the department had only to provide him with so many cents a day for his food.

The United States Army ration is the most liberal ration in the world. It is the best ration for the far northwest of this continent, whence come the subzero cold waves to sweep over the country from the upper strata of the atmosphere, and it is the best for the tropics when intelligently utilized. It is the product of the experience of several generations of army officers and it is the part of wisdom to be slow in urging alterations at the suggestion of people who know that an excess of fatty food is not suitable for a dietary in the tropics and who have just discovered that there are 12 ounces of bacon in the soldier's ration.

But the best dietary for the tropics is a wholly different subject from the ration and we will await with interest the publication of the observations of our officers, line and medical, on the modifications which appear to them to be judicious for Cuba, Puerto Rico and the Philippines.

Very truly yours,

CHARLES SMART, M.D.,
Lieutenant-Colonel and Deputy Surgeon-General, U. S. Army.

CONTRACT SURGEONS IN THE UNITED STATES ARMY.

WASHINGTON, December 4, 1899.

MR. EDITOR: — The issue of a general order of the War Department calling attention to the fact that acting assistant surgeons should be given the same protection in their positions and the same respect and obedience from enlisted men as is accorded commissioned officers is of interest, coming, as it does, almost simultaneously with the publication of a call for a mass meeting of acting assistant surgeons in New York on the 5th of December, for the redress of grievances and favorable legislation by Congress in their behalf. It calls attention to the anomalous status of this worthy class of men as well as to the many serious defects in the contract surgeon system which are constantly requiring petty regulation and legislation on the part of the authorities for the promotion of its efficiency.

It may be premised at the outset that all of this annoyance, friction and dissatisfaction would be promptly done away with if every medical man connected with the military service possessed the well-understood rights, privileges and responsibilities of commissioned officers, and at the same time there is no doubt but that the professional services of a superior class of men would be thus secured to the Government. The present contract system, by which physicians are brought from civil life and paid a fixed stipend so long as their services are required without endowment with military rank, is degrading to the dignity of the medical profession whose representatives they are, and is a relic of the former social inferiority of the medical man as compared with line officers, an inferiority even now tacitly assumed in the British service, where the surgeon is not invited to join the regimental mess nor his wife and family accorded equal social privilege with the households of the combatant officers. It is a direct effort to belittle his importance, restrict his services and exclude him from his rightful position in the military oligarchy. No one should suggest the temporary hiring of grocery clerks to perform the duties of commissariat nor of civilian contractors to act as purchasing, constructing or shipping quartermasters; yet the proposition to bring in the practising physician, wholly inexperienced in the ways and needs of the military service and expect him to satisfactorily perform the multifarious duties of the trained medical officer appears to be only natural to the public mind. Popular imagination pictures the army surgeon as a somewhat gory individual, who at such times as he is not engaged in lopping off arms and legs acts merely as a dispenser of pills and potions. This conception, however, is far from the reality. The field of operative surgery is circumscribed by restricted opportunity, and antisepsis, with resulting conservatism. The more humane character of wounds of the battlefield have done much to still further reduce the surgical duties of the medical officer. With a more rational knowledge of the effects of drugs the importance of prescribing has greatly diminished and the army surgeon, like his civilian *confrères*, is prone to depend rather upon careful nursing and the *vis medicatrix naturæ* than upon the doubtful effects of generous medication. It is obviously essential that he should be expert in the branches of medicine and surgery, but it is none the less certain that the army medical officer finds his chief usefulness in the province of hygiene, a subject rarely capable of being turned to financial account in civil life and one in which the average practitioner, striving to meet his monetary obligations and hold his own in professional competition, is usually both unlearned and uninterested. Hence it is that the army medical man finds his civilian counterpart not in the busy physician or surgeon but rather in the health officer or the few whose independent means permit the study of an unremunerative science, and hence also the far greater value to the military service, if outside assistance be required, of the latter professional class. It may be accepted that few medical men are properly qualified by their previous training to enter at once upon the duties which fall to the lot of the army surgeon.

Besides bringing into the service a class of men who, while excellent professional men as regards the active practice of civil life, are unfitted to assume the responsibilities of the sanitarian, the contract surgeon system, with the absence of official status which it entails, is both illogical and productive of friction and inefficiency. However one may regard the army medical service in the abstract, it is a distinctly military institution. Discipline must be maintained and there are enlisted hospital-corps men to control, educate and command. How relatively important a task this is may be seen by the fact that during the war with Spain there were in our army more than 7,000 sanitary soldiers — the equal of a command of a major-general — and at the present time the number, 4,000, is equal to the numerical strength of eight infantry regiments as organized eighteen months ago. These men, like their comrades and superiors in the line, are prone to respect authority only as they see it officially embodied in shoulder straps. During the late

war, and at present also, these men were largely organized into ambulance and hospital-corps companies which had to be commanded and instructed, not only in nursing and first aid, but in the duties of the soldier — the things which change undisciplined recruits into an efficient integral factor of the military establishment. Such commands were often larger and of more responsibility than those possessed by captains of infantry, cavalry and artillery — and no one would be willing to say that an untrained individual brought in from civil life is, through intuition, at once competent to organize, educate and control such organizations in the line.

To properly administer a large division or general hospital often containing the numerical strength of a full regiment requires not only executive ability and experience in handling men but also an intimate acquaintance with military methods and customs. Further, some one must be responsible for the safety and administration of medical property, of which millions of dollars' worth are possessed by the United States for securing the comfort and care of the sick. The Government has no official hold upon the contract surgeon and hence dares not attempt to make him an accountable officer. He is not amenable to court martial any more than any other civilian, and justice — for malfeasance of office — can only be brought about by the ponderous machinery of the United States civil courts. Such a condition is obviously undesirable. In addition, incompetency, inattention to duty, disobedience of orders or other military offences can be punished only by discharge from the service. Furthermore, the system is directly prejudicial to the *morale* and efficiency of the Medical Department. Few men of the professional attainments desired in the service care to occupy the anomalous position of contract surgeon, with its absence of authority and its precarious future presenting small hope of advancement. Bright and desirable young men accept contracts to tide over temporary financial difficulty and, their object attained, go back into civil life at a time when, through the experience they have acquired, they and their services have become of the most value to the Government. A few older men who have passed the comparatively elementary examination required for appointment, but who have failed in the competition of civil life or are unwilling to risk its hazards, are content with the means of temporary support afforded by the position they occupy; secure in the knowledge that their professional progress in its relation to the general advancement of medical science will not be tested in the future, as is repeatedly done with all commissioned medical officers. This class of men is not wanted in the military service.

The contract surgeon system has not even the merit of economy. It is true that Congressman Hull stated in Congress last winter that "the best medical talent in the country could be secured for $150 per month," as contract surgeons, but with this statement the medical profession at large will scarcely agree. The pay of an acting surgeon exceeds the pay of a commissioned medical officer for about the first seven years of his service. The allowances of both are the same, except that the medical officer is required to purchase and keep his mount at his own expense, while the contract surgeon is allowed the use of a Government horse gratis, wherever it is required. Further, the former is obliged to maintain a much larger and more expensive outfit of uniforms. It will be admitted that such a condition works an injustice to the men who have undergone a far more searching examination into their physical, mental and moral qualifications and who may therefore be fairly assumed to be, as a whole, a superior class of men.

In the contract surgeon system there is unfortunately no legal safeguard against its use for political purposes. Candidates are appointed by the surgeon-general, who is thus made an object of attack by the place hunters, whose support and qualifications are too often more of a political than a professional character, and by that class of politicians who regard all Government positions as a means of patronage and whose scruples are not too great to prevent their use of any influence to force compliance with their demands. There is no legal provision, however, by which an appointment through the surgeon-general cannot be directed by higher authority, even in the face of strong objections. The method of appointment of commissioned medical officers is based wholly on merit, is minutely prescribed by law and is so entirely irrespective of politics that there is no way by which a candidate could be appointed who has not fulfilled all the qualifications required by an impartial examining board. Such a protection given a special class should cover the entire personnel of the Medical Department; for it, and it alone, bears the praise or censure resulting from the efficiency of its representatives.

The remedy for the above conditions is simple, and is in the power of the medical profession of the country to administer during the next Congressional session. All medical men serving with troops should be commissioned officers having a permanent status and possessing equal prerogatives with officers of other departments. They should be sufficient in numbers to properly cope with any emergency. In the few instances where outside and temporary appointments may be necessary such action should be taken only after the attainment of the standard required in the regular service and the appointers should be commissioned as officers of volunteers. They should be in a position to demand as rights what too many line officers are prone to regard as concessions. They should all possess the power of command, a power the proper exercise of which has been demonstrated by General Wood and others to depend upon the man rather than upon the calling which he has chosen in life.

In conclusion, it behooves the medical profession at large to protect the rights of its representatives in the military service, and that the necessity is actual rather than theoretical is shown by the fact that at the present time there are only 187 regular medical officers and over 400 contract surgeons serving under the colors.

Very respectfully yours,

EDWARD L. MUNSON, M.D.,
Assistant Surgeon United States Army.

SWEDISH MASSAGE LITERATURE AND SWEDISH MASSAGE.

BOSTON, November 27, 1899.

MR. EDITOR: — Dr. Douglas Graham's communication in the JOURNAL, November 23, page 534, induces me to ask you kindly to publish a few remarks which I think are appropriate.

The statement conveys several incorrect impressions. It asserts that no book existed in the Swedish language prior to, or in, 1887; it implies that the Swedes gained their first knowledge of massage from an article written by Dr. Graham and translated into the Swedish language; it also implies incompetency of the Swedes on the subject of massage and its application. It expresses the view that massage with the aid of lubricants is merely inunction, that oil and other lubricants are used for the purpose of preventing friction, and that the Swedes are over-fond of methods of manipulation by the aid of grease.

In reply I would wish to call the attention of Dr. Graham to the following citation of Swedish authors, with the name and date of their publications on the subject of massage and gymnastic treatment. Also, I would refer him to Swedish medical literature from the early part of this century until to-day. The work of the Swedes in this field is so well known and generally admitted that this refutation of Dr. Graham's well-meaning but misguided and erroneous attempt of furnishing unsolicited information would hardly be necessary, but it is earnestly hoped that it may help him to estimate more accurately the history of massage, and the effect which the work of the Swedes has had upon the development of this form of treatment, as it is understood and practised to-day.

Dr. T. J. Hartelius's "Lärobok i Sjukgymnastik" (second edition) was published in June, 1883. In 1833 Dr. M. Retzius wrote "Några ord om värdet af friktioner," and a

few other publications in Swedish are: by Asp in 1878 "Om lifmoder massage"; by Bergham in 1875, "Om de akuta traumatiska ledgängskadornas behandling med massage"; by Berghman and Helleday in 1873, "Anteckningar om Massage"; by E. Johnson in 1878, "Bidrag till Massage-behandlingens Statistik"; by Lindblom in 1887–8, "Om Brandts' gynekologiska gymastik"; by "M—u" in *Eira* (a medical journal), 1877, "Massage i Japan"; by Nicolaysen in 1873, "Om Massage som Helbradelses Middel" (Norwegian); by Pippingskjöld in 1881, "Yttrande öfver Majoren Thure Brandts' genital gymnastik i allmänhet och särskildt"; in 1875, "Tio fall af Massage" by Westerland, and "Något om Massage," by Wretlind, and others too numerous to mention. Also, it must be remembered that many Swedes have written on this subject in foreign languages, notably German, French, English and Spanish; furthermore, nearly every author on massage, of whatever nationality, refers to Swedish workers and quotes their publications freely, thus giving them credit of pioneer work in this field.

The impression is received from Dr. Graham's letter that the Swedes gained their first knowledge of massage as a remedial agent from a translation into their language of an article written by Dr. Graham; a very absurd impression, obviously, since Scandinavian physicians had given attention to this subject long before Dr. Graham saw daylight. It is not my object in writing this to claim for the Swedes the credit of all the work that has been done in this direction; many English, American, French and German physicians have done an immense amount of work and they are freely quoted by recent Swedish writers on this subject. Dr. Graham is himself entitled to credit for such work, but it is to be regretted that he should expose himself to criticism by such a reckless and intemperate outburst, containing inaccurate statements and implying incompetency of a whole race in a line of work where they have achieved universal reputation, and deservedly so, since it has been gained by conscientious, industrious, persevering work along rational, scientific lines.

The quotation from Dr. Mitchell's article needs comment. In the first place, it is difficult to understand what bearing this quotation can have upon the qualifications, or lack of them, as Dr. Graham so fondly maintains, of the reviewer who favorably mentioned Mr. Ostrom's book on massage, to do so, and who, by so doing, precipitated this extraordinary assault upon the Swedes. I do not know who wrote the review, but I am quite sure that it was not written by a Swede, and the alleged incompetency of this race would therefore not be material in discussing the shortcomings of a reviewer on a book, even though the book itself were written by a Swede, and on the subject of massage, about which, among this nation, ignorance, or, at the very best, an erroneous conception, is prevalent, according to Dr. Graham's view.

Regarding the quotation itself, I need only refer to the many favorable comments made by American, English, German and French physicians about Swedish massage and gymnastics, and to the excellent books and articles published by well-trained and balanced physicians in the Swedish language on this subject, to show the folly and inaccuracy of Dr. Mitchell's statements. That they rub badly may be true, but they apply massage and gymnastics well, as a rule, if they have received the training adopted in Sweden; rubbing is one thing and massage another. That they are over-fond of *effleurage* is not true; if Dr. Mitchell cares to read Dr. Hartelius's book, or any other book on this subject written by a Swede, he will find that this manipulation occupies its proper place, and is not recommended out of place. I have never known that any American made the claim of having originated the special manipulation known as muscle-kneading; the different modes of kneading a muscle are spoken of in early Swedish writings. Kneading of the muscles was also practised among the Greeks and Romans, and among barbaric races long before the dawn of our present civilization. Therefore it would seem incorrect to speak of an American muscle-kneading, or of a Swedish muscle-kneading. As for thought at the very finger-ends, the use of these words in this connection may be original with Dr. Mitchell, but the use of intelligence and care in manipulating the tissues in disease is not original with him.

In Continental Europe (and in America too) many so-called institutes and sanitariums exist, where Swedes are employed to apply massage, but they are usually not thoroughly trained, either as *masseurs* or as physicians. They are commonly employed because they are Swedes, and a very limited knowledge of some manipulations has been acquired by them; they are usually fairly strong and willing, and often think they must give the patient his money's worth, and they do so by using considerable physical force in their manipulation. Probably Dr. Mitchell fell into such hands. To draw generalized conclusions, and to make so sweeping statements from such premises and from a few poorly chosen individual experiences, is obviously not only illogical but also unjust. I am not aware that Dr. Mitchell ever claimed to be a practical *masseur*, and if he is not, his proficiency as a critic of the massage technique of the Swedes, who are masters in this field, would seem questionable. I believe somebody has referred to Dr. Mitchell as a "father of massage"; this title appears to be misapplied, since it is for his ability as a diagnostician and medical practitioner that Dr. Mitchell has earned attention, rather than as a *masseur*. I regret the necessity of unfavorable comment on the statements of so distinguished, scholarly and learned a physician as Dr. Mitchell undoubtedly is, but I feel that justice demands it, since his words carry great weight with them, even though they be thoughtlessly spoken.

The impression is also suggested, from the use of these quotations by Dr. Graham, that he is a native of America, but I believe that he was born in Scotland.

As to the use of oil, or other lubricants, in doing massage, it is not only to be recommended, but absolutely necessary when giving deep frictions. The object of the lubricant is obvious: it is to prevent injury to the epidermis. It is not for the purpose of preventing friction, as Dr. Graham so illogically says; the friction is essential, and it is a very important factor as a remedy, due not only to the effect upon the circulation, but also in some instances to the heat produced; the degree of heat to be generated by the friction would depend on the object to be desired, and is regulated by the speed, pressure and size of friction surfaces, and also by the quantity and quality of lubricant used. The moderate use of oil cannot justly be termed inunction; it does not obviate the manipulation called friction, but facilitates it. A good "grip" is not necessary in doing friction, since it is done by making the hand, or finger, slide over the skin with a certain degree of pressure. I agree with Dr. Graham that it does not require any more skill to *rub* with grease than it does to paint a barndoor (although to do this well would require a certain amount of technical skill, as every painter can vouch for), but I also wish to emphasize the fact that the use of lubricants in *massage* does not in the least diminish the necessity for technical skill, manual dexterity, medical knowledge, and other qualities required by everybody who would attempt to apply massage for the relief of disease. I would cite the manipulation of the sciatic nerve, when diseased, as an example, where deep friction by the aid of lubricants would be indicated and where judgment, skill and knowledge are as important as in any condition requiring dry manipulation (such as kneading, percussion, vibration and pressure).

A word about the home of massage. No educated Swede ever claimed his country as the home of this treatment, if by home is to be meant the place of birth or origin. Sweden can only claim to have produced a number of men who have done considerable original work with a view of adapting manipulations and movements as a means of cure of disease, of having systematized this mode of treatment, and of having paved the way for its rational application to disease in accordance with medical thoughts and progress. But as already stated, they are not alone in this work; other nations have done their share.

The home, or origin, of massage is to be found in the Garden of Eden. Adam found that scratching relieved itching, and from his time until to-day, steady progress has been made. As is well known, many savage and semi-savage people use the treatment; even the dog takes a hand in massage when licking his swollen, painful feet.

If I am not encroaching too much upon the valuable space of the JOURNAL, and if deemed proper, I would like to add a word about Mr. Ostrom's book. On the whole, the book deserves favorable comment, and fulfils the purpose for which the author intended it fairly well. The conciseness of the book becomes, however, in some instances, too pronounced, and more descriptive and accurate terms could be used in naming certain movements and manipulations; a few slight inaccuracies also occur. For instance, no mention of centrifugal light striking over the peripheral nerves is made; deep straight frictions are also omitted. Too little is said of nerve-pressure; vibration is spoken of as a shaking, which it is not, and should not be. The various forms of kneading are not sufficiently dealt with. In Fig. 7 on page 22, the hands are in correct position for circular or combined kneading of the thigh, a manipulation produced by a combination of an alternate squeezing and rolling of the hands, the grasped tissues being carried along with the motion of the hands, but it is represented as an illustration of kneading with the thumbs, a procedure which would, ordinarily, hardly be appropriate in this region, or would be but rarely needed here. Transverse muscle-kneading is not spoken of. The most conspicuous deficiency in the terminology is offered by the constant use of the word "rotation" wherever the author intends to speak of circumduction. On page 55, in the chapter on vibrations, the author says: "Pressing and shaking [meaning vibration][1] have a stimulating and strengthening effect upon the nerves"; this is evidently an error. The effect of nerve-pressure and of vibration is sedative, allaying irritation and relieving pain. This effect is produced probably by diminishing the conductivity of impulses through the neuron; such a result would imply diminished physiological activity of the nerve tissue, or a condition approaching rest, rather than increased physiological activity, which would be anticipated from stimulation.

Some criticism may be made of the remarks about the treatment of tabes; co-ordinative exercises are not even alluded to, the description of nerve stretching is not complete, and a more detailed account of spinal massage would not be amiss.

In spite of these and other minor defects, the book is a step in the right direction, and it is certainly very practical.

Respectfully yours,

ALFRED H. LINDSTRÖM, M.D.

[1] My brackets.

METEOROLOGICAL RECORD

For the week ending November 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...19	29.83	51	54	48	86	90	88	S.W.	W.	6	12	O.	F.	.09
M..20	29.85	44	51	36	78	75	76	N.W.	N.W.	18	11	C.	C.	
T...21	29.95	39	45	33	80	66	73	N.	N.W.	10	4	C.	C.	
W..22	29.78	44	51	36	65	66	66	W.	W.	9	9	R.	O.	.02
T...23	29.88	42	47	36	75	60	68	N.	N.	12	14	C.	O.	
F...24	30.03	40	49	32	69	49	59	N.W.	N.W.	8	6	C.	C.	
S...25	29.97	34	39	29	74	63	68	N.W.	N.W.	12	10	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 25, 1899.

CITIES	Estimated population.	Reported deaths in week.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1153	370	9.00	21.33	1.17	.90	3.24
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	225	74	10.12	20.68	.44	1.76	4.84
Baltimore	506,389	167	42	5.90	8.26	—	—	5.31
Cincinnati	405,000	103	—	2.94	9.80	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	365,000	93	22	12.96	14.04	1.08	7.56	1.08
Washington	277,000	96	22	14.56	8.32	—	6.24	5.20
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	54	12	18.50	10 10	7.40	3.70	1.85
Nashville	87,754	25	7	12.00	16.00	4.00	4.00	8.00
Charleston	65,165	—	—	—	—	—	—	—
Worcester	111,732	35	9	14.30	5.12	5 12	—	2.86
Fall River	103,142	25	7	20.00	16.0	12.00	4.00	4.00
Cambridge	92,520	33	10	15.15	21.21	—	6.06	6.06
Lowell	90,114	27	10	7.40	18.50	3.70	—	3.70
New Bedford	70,511	19	8	10.52	10.52	5.26	—	—
Lynn	68,218	—	—	—	—	—	—	—
Somerville	64,394	12	4	16.66	16.66	—	—	8.33
Lawrence	59,072	18	12	16.66	11.11	5.55	—	—
Springfield	58,268	22	3	8.30	4.15	4.15	—	4.15
Holyoke	44,510	14	3	21.42	7.14	7.14	—	7.14
Brockton	38,750	—	—	—	—	—	—	—
Salem	37,732	10	4	20.00	10.00	10.00	—	—
Malden	36,421	7	1	—	—	—	—	—
Chelsea	34,235	14	2	7.14	—	—	—	7.14
Haverhill	32,651	10	2	20.00	—	—	—	10.00
Gloucester	31,426	4	—	—	—	—	—	—
Fitchburg	30,523	4	—	—	—	—	—	—
Newton	30,461	11	1	9.09	9.09	—	9.09	—
Taunton	28,527	12	—	—	8 33	—	—	—
Everett	28,102	6	2	16.66	16.66	—	16.66	—
Quincy	24,578	4	—	25.00	—	—	—	25.00
Pittsfield	23,471	11	3	9.09	9.09	9.09	—	—
Waltham	22,791	3	1	33.33	33.33	33.33	—	—
North Adams	21,583	3	3	—	33.33	—	—	—
Chicopee	18,316	7	4	14.28	28.56	14.28	—	—
Medford	17,190	3	2	—	—	—	—	—
Newburyport	15,636	3	1	—	—	—	—	—
Melrose	14,721	2	—	—	—	—	—	—

Deaths reported 2,257; under five years of age 644; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 212, acute lung diseases 376, consumption 263, diphtheria and croup 81, typhoid fever 34, diarrheal diseases 32, measles 18, scarlet fever 16, erysipelas 13, cerebro-spinal meningitis 12.

From measles New York 12, Pittsburg 3, Providence 2, Boston 1. From scarlet fever New York 9, Boston 2, Washington, Providence, New Bedford and Salem 1 each. From erysipelas New York 9, Cincinnati 2, Boston and Washington 1 each. From cerebro-spinal meningitis New York 4, Boston and Worcester 2 each, Washington, Cambridge, Somerville and Haverhill 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending November 18th, the death-rate was 17.3. Deaths reported 3,785: acute diseases of the respiratory organs (London) 324, diphtheria 117, fever 98, measles 83, diarrhea 52, whooping-cough 36, scarlet fever 30, small-pox (Hull) 6.

The death-rates ranged from 11.5 in Burnley to 25.3 in Preston: Birmingham 18 0, Bradford 15.9, Croydon 12.7, Gateshead 19.1, Huddersfield 14.6, Leeds 17.5, Leicester 17.1, Liverpool 21.2, London 17.5, Manchester 18.5, Newcastle-on-Tyne 15.3, Nottingham 19.6, Portsmouth 14 5, Sheffield 21.4, Sunderland 15.4.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING DECEMBER 2, 1899.

L. G. HENSBERGER, surgeon, ordered to temporary duty, November 23d, in connection with Recruiting Rendezvous, Detroit, Mich.

H. N. T. HARRIS, passed assistant surgeon, ordered to New York, N. Y., December 4th, for examination for promotion, and then home and to wait orders.

M. H. SIMONS, medical inspector, ordered to the Naval Recruiting Rendezvous, 177 Main Street, Buffalo, N. Y.

A. F. PRICE, medical inspector, ordered to be examined for promotion at Washington, D. C., November 28th, and then to wait orders.

G. P. LUMSDEN, surgeon, detached from the Naval Recruiting Rendezvous, Buffalo, N. Y., and ordered home to wait orders.

D. DICKINSON, medical inspector, detached from the Naval Hospital, Washington, December 1st, and ordered home and to wait orders.

A. F. PRICE, medical inspector, ordered to the Naval Hospital, Washington, D. C., December 1st.

F. B. HANCOCK, assistant surgeon, resignation accepted to take effect from November 25th.

B. R. WARD, passed assistant surgeon, ordered to the "Independence," December 15th.

J. S. TAYLOR, assistant surgeon, detached from the "Independence," December 15th, and ordered to the "Scindia," December 31st.

E. DAVIS, assistant surgeon, appointed assistant surgeon, November 21st.

G. P. LUMSDEN, surgeon, ordered to temporary duty on the "Franklin," December 1st, during absence of Passed Assistant Surgeon J. A. GUTHRIE, on leave; thence home and to wait orders.

J. STOUGHTON, passed assistant surgeon, order of October 14th, detaching from the "Monadnock" and ordering to the "Bennington," revoked.

D. G. BERRY, assistant surgeon, order of October 14th, detaching from the "Bennington" and ordering to "Ranger," revoked.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING NOVEMBER 30, 1899.

CARTER, H. R., surgeon. To report at Washington, D. C., for special temporary duty. November 18, 1899.

CARMICHAEL, D. A., surgeon. Leave of absence for thirty days granted by Bureau letter of August 23, 1899, revoked. November 17, 1899.

MAGRUDER, G. M., surgeon. Relieved from duty at Memphis, Tenn., and directed to report at Washington, D. C., for special temporary duty. November 23, 1899.

GEDDINGS, H. D., passed assistant surgeon. To proceed to New York, N. Y., for special temporary duty. November 18, 1899.

SMITH, A. C., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. November 20, 1899. To rejoin station at Norfolk, Va. November 22, 1899.

GRUBBS, S. B., assistant surgeon. Relieved from duty at Cienfuegos, Cuba, and directed to report at Washington, D. C., for special temporary duty. November 23, 1899.

ROBINSON, D. E., assistant surgeon. Relieved from duty at Mobile, Ala., and directed to proceed to Memphis, Tenn., and assume command of the Service. November 23, 1899.

THORNBURY, F. J., assistant surgeon. Relieved from duty at New York, N. Y. (Immigration Depot), and directed to proceed to San Francisco, Cal., for duty and assignment to quarters. November 20, 1899.

BREADY, J. E., acting assistant surgeon. Granted leave of absence for seven days. November 23, 1899.

CLARKE, F. M., acting assistant surgeon. Granted leave of absence for ten days from November 20th. November 21, 1899.

DUDLEY, D. E., acting assistant surgeon. Department letter of October 31, 1899, granting Acting Assistant Surgeon Dudley leave of absence from November 1, 1899, amended so that said leave shall date from November 16th. November 21, 1899.

SMYTH, F. R., acting assistant surgeon. Granted leave of absence for four days. November 20, 1899.

ACHENBACH, JOHN, hospital steward. Relieved from duty at Port Townsend, Wash., and directed to report to the Port Townsend Quarantine Station, Wash., for duty. November 18, 1899.

BROCK, G. H., hospital steward. Relieved from duty at New Orleans, La., and directed to proceed to Cincinnati, O., for duty and assignment to quarters. November 18, 1899.

MCKAY, M., hospital steward. Relieved from duty at Boston, Mass., and directed to proceed to New York, N. Y. (Stapleton), for duty and assignment to quarters. November 18, 1899.

ALLEN, G. C., hospital steward. Relieved from duty at New York, N. Y. (Stapleton), and directed to proceed to the Delaware Breakwater Quarantine Station for duty and assignment to quarters. November 18, 1899.

PECK, F. H., hospital steward. Relieved from duty at Baltimore, Md., and directed to proceed to New Orleans, La., for duty and assignment to quarters. November 18, 1899.

OLSEN, E. T., hospital steward. To rejoin station at Wilmington, E. C. November 18, 1899.

TROXLER, R. F., hospital steward. Relieved from duty at San Francisco, Cal., and directed to proceed to Port Townsend, Wash., for duty and assignment to quarters. November 18, 1899.

PECKHAM, C. T., surgeon. Granted leave of absence for four days. Novem er 28, 1899.

GLENNAN, A. H., surgeon. Relieved from duty as quarantine officer at the port of San Juan, Porto Rico, and directed to proceed to New Orleans, La., and assume command of the Service. November 27, 1899.

PETTUS, W. J., surgeon. Relieved from duty at the Cape Charles Quarantine Station and directed to proceed to Cleveland, O., and assume command of the Service. November 27, 1899.

SMITH, A. C., passed assistant surgeon. Relieved from duty at Norfolk, Va., and directed to report at Washington, D. C., for special temporary duty. November 28, 1899.

STIMPSON, W. G., passed assistant surgeon. To rejoin station at St. Louis, Mo. November 27, 1899.

EAGER, J. M., passed assistant surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Cincinnati, O., and assume command of the Service. November 27, 1899.

OAKLEY, J. H., passed assistant surgeon. Relieved from duty at Evansville, Ind., and directed to report at Washington, D. C., for special temporary duty. November 27, 1899.

SPRAGUE, E. K., passed assistant surgeon. Relieved from duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. November 28, 1899.

THOMAS, A. R., passed assistant surgeon. Relieved from duty at the Reedy Island Quarantine Station and directed to report at Washington, D. C., for special temporary duty. November 28, 1899.

WICKES, H. W., passed assistant surgeon. Relieved from duty at Cleveland, O., and directed to report at Washington, D. C., for special temporary duty. November 27, 1899.

GREENE, J. B., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. November 25, 1899. To rejoin station at Boston, Mass. November 28, 1899.

MATHEWSON, H. S., assistant surgeon. Relieved from duty at the San Francisco Quarantine Station and directed to report at Washington, D. C., for special temporary duty. November 24, 1899.

LAVINDER, C. H., assistant surgeon. Relieved from duty as quarantine officer at the port of Ponce, Puerto Rico, and detailed as quarantine officer at San Juan, Puerto Rico. November 27, 1899.

GRUBBS, S. B., assistant surgeon. Relieved from duty as quarantine officer at the port of Cienfuegos, Cuba, and directed to report at Washington, D. C., for special temporary duty. November 24, 1899.

RUSSELL, H. C., assistant surgeon. Relieved from duty at Cairo, Ill., and directed to proceed to Boston, Mass., for duty and assignment to quarters. November 27, 1898.

VON EZDORF, R. H., assistant surgeon. To rejoin station at New Orleans, La. November 27, 1899.

FRICKS, L. D., assistant surgeon. To report at Washington, D. C., for temporary duty. November 24, 1899.

GWYN, M. K., assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to Chicago, Ill., for duty and assignment to quarters. November 27, 1899.

CORPUT, G. M., assistant surgeon. To report at Washington, D. C., for special temporary duty. November 24, 1899.

RICHARDSON, T. F., assistant surgeon. Relieved from duty as quarantine officer at the port of Nuevetas, Cuba, and directed to proceed to the Reedy Island Quarantine Station and assume command of the Service. November 24, 1899.

KING, W. W., assistant surgeon. Relieved from duty at New Orleans, La., and assigned to duty as quarantine officer at Ponce, Puerto Rico. November 27, 1899.

KORN, W. A., assistant surgeon. Relieved from duty at Chicago, Ill., and directed to proceed to Evansville, Ind., and assume command of the Service. November 27, 1899.

HOLT, J. M., assistant surgeon. Relieved from duty at St. Louis, Mo., and directed to proceed to Cairo, Ill., and assume command of the Service. November 27, 1899.

EDSON, ELMER R., assistant surgeon. To proceed to St. Louis, Mo., for duty and assignment to quarters. November 24, 1899.

WILLE, CLARENCE W., assistant surgeon. To proceed to Boston, Mass., for duty and assignment to quarters. November 24, 1899.

AMESSE, JOHN W., assistant surgeon. To proceed to Detroit, Mich., for duty and assignment to quarters. November 24, 1899.

WILSON, ROBERT L., assistant surgeon. To proceed to San Francisco, Cal., for duty and assignment to quarters. November 24, 1899.

BROWN, B. J., Jr., acting assistant surgeon. Granted leave of absence for three days. November 27, 1899.

FRICK, JOHN, acting assistant surgeon. Relieved from duty at Santiago, Cuba, and directed to proceed to Havana, Cuba, for duty. November 29, 1899.

LINDSLEY, J. M., acting assistant surgeon. Detailed as quarantine officer at the port of Cienfuegos, Cuba. November 24, 1899.

STONE, OWEN W., acting assistant surgeon. Detailed as quarantine officer at the port of Nuevitas, Cuba. November 24, 1899.

APPOINTMENTS.

ELMER R. EDSON, of Indiana; CLARENCE W. WILLE, of Pennsylvania; JOHN W. AMESSE, of Michigan, and ROBERT L. WILSON, of Texas, commissioned as assistant surgeons. November 22, 1899.

Original Articles.

EXPERIMENTS UPON THE DISINFECTION OF ROOMS WITH FORMALDEHYDE GAS IN THE CITY HOSPITAL AT CHARLOTTENBURG, BERLIN.

BY A. W. FAIRBANKS, M.D., BOSTON, WITH REMARKS BY PROF. E. GRAWITZ, M.D., BERLIN.

THE following experiments in the disinfection of rooms by means of formaldehyde gas were instituted at the instance of Prof. Ernst Grawitz, of the City Hospital at Charlottenburg, and conducted under his supervision. The object was to determine the actual value of that form of formaldehyde recently placed upon the market by the firm of E. Schering as a practical disinfectant.

This form of formaldehyde differs from that hitherto in use, in that we have to do here with the polymerized state, the so-called trioxymethylene.

FIRST EXPERIMENT.

The first investigations with this substance were made by Aronson,[1] who found this polymerized formaldehyde practically a non-poisonous body. According to the same investigator, this substance may be changed, by the action of the hot gases of combustion, from the solid state of polymerization to a gaseous condition of non-polymerized formaldehyde, and retained in this condition by the moisture incident to the combustion.

This polymerized formaldehyde as used in these experiments is put up by the above-named firm in the convenient form of tablets, each containing one gramme.

The apparatus employed is one of exceeding simplicity. It consists of a sheet-iron cylinder (*d*) resting upon three legs. In the upper portion, for the reception of the tablets, is placed a cup-like receptacle (*c*), the upper third of which is pierced by apertures covered by wire netting (*n*). Beneath the structure is placed an alcohol lamp with several burners. The formaldehyde in *c*, subjected to the hot gases of combustion from the lamp, passes off in a gaseous state. These gases of combustion pass through the perforations *n*, and mix with the formaldehyde gas, supplying to it the amount of moisture necessary to prevent its return to a solid state[2] (see diagram).

The apartment employed was an ordinary living-room, containing 96.6 cubic metres air space. Small pieces of woollen and linen cloth, of a size conveniently introduced into the culture tubes, were thoroughly soaked in bouillon cultures of the bacteria, were then dried *in vacuo*, and exposed in different parts of the room.[3] Of these pieces, some were openly exposed, others enclosed between layers of cloth.

(1) Pieces infected with anthrax, diphtheria, typhoid and staphylococci:

Anthrax: Freely exposed on the upper, middle and lower portion of a window curtain; freely exposed on the floor; between two layers of cloth, on the floor; between two mattresses on the floor.

Typhoid: Freely exposed on a table; between two layers of cloth on the floor.

Diphtheria: Freely exposed, some on a table, others on the floor.

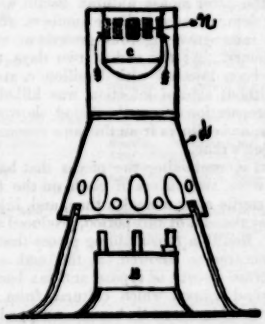
Staphylococci: Between two layers of cloth, about two metres above the floor.

(2) Besides these pieces of infected linen and woollen there were also placed in the room two thickly grown agar cultures of anthrax, wrapped in many folds of linen, the one at a height of two metres, the other on the floor. Another culture of anthrax was placed openly in a glass plate on the floor. Silk threads were infected with the same bacillus and placed on glass plates, one as near as possible to the disinfector, another as far as possible away.

(3) Two glasses of sputum, which contained tubercle bacilli in large numbers, were dried in the vacuum. Of these one was placed in the room, the other was retained for control.

(4) From a pile of horse-hair, from an old mattress, that lay by chance in a corner of the room, several cultures were made just before the door was closed.

It may here be noted that these cultures showed profuse growth of a large bacillus, of cocci and sarcini.



The doors and windows were closed and all cracks stopped with cotton wool, over which were pasted thick strips of heavy paper. The disinfector was now placed in the middle of the apartment, with 95 tablets in the receptacle, a proportion of approximately one gramme of formaldehyde for every cubic metre of air space. The lamp was now lighted and the entrance door of the room closed likewise, in the manner above described.

It should be here mentioned that from each of the infected objects cultures for purposes of control, made just before closing the room, showed active growth.

Shortly before the opening of the room, at the end of thirty hours, that portion of the tubercular sputum that had been retained as control was mixed with sterile water and injected into the abdominal cavity of a guinea-pig (weight 490 grammes).

At the end of about thirty hours the room was opened. Upon entering, a sharply irritating effect of the gas upon the nasal and conjunctival membrane was experienced. This irritation, although at first very severe, soon ceased, and it was perfectly possible to remain in the room for two hours with doors and windows still tightly closed. Upon leaving the room

[1] Hans Aronson: Ueber eine neue Methode zur Desinfection von grösseren Raumen mittels Formalin. Zeitschr. f. Hyg. u. Infectionskrankheiten, Bd. XXV, 1897.

[2] Loc. cit.

[3] The use of such infected pieces of woollen and linen would seem to correspond more nearly to the conditions encountered in practical disinfection than the use of silk threads.

later, and again re-entering it, after some moments in the clear air, the same irritation was noticed, only again to diminish as the stay within was prolonged.

The tablets were consumed, a few ashes only remaining in the receptacle.

Each infected piece of cloth was now placed in a separate sterile glass containing a sterilized two-per-cent. solution of ammonia, and allowed to remain for a few moments in order to remove any traces of formaldehyde, possibly present in the pieces, that might hinder the growth of organisms not killed during the exposure. The pieces were then placed in bouillon and upon agar, and the tubes left in the incubator at a temperature of 37° C. The same was also done with cultures from anthrax, agar *g*, *h*, *i*.

The results were the following:

(1) Anthrax *a*, *b*, *c*, *d*, which were the pieces openly exposed at different heights in the room, remained sterile at the end of a week's time.

Although the bouillon remained sterile at the end of this period, yet a considerable quantity from the tube *c* was injected into a white mouse. On the following morning this mouse was found perfectly well, while another mouse that had been injected with bouillon from one of the control tubes was found dead. In the blood of the latter mouse anthrax bacilli were microscopically demonstrated in large numbers, and cultures from the same gave vigorous growth of anthrax in eighteen hours. At the end of two days the mouse that had been injected with bouillon *c*, and had remained without sign of infection, was killed. Microscopical preparations from the blood showed no trace of anthrax, and cultures from the same remained sterile after a week's time.

Bouillon *e*, containing the pieces that had lain enclosed between two layers of cloth on the floor, also remained sterile after a week's time, and, injected into a mouse at the end of this period, produced absolutely no effect. Bouillon *f*, containing pieces that had lain between mattresses, showed, at the end of twenty hours, profuse growth of typical anthrax bacilli.

Agar *g* and *h*, upon which cultures from the thick agar growths of anthrax that were wrapped in many folds of linen were made, showed after twenty hours also profuse growth of anthrax. A portion of the cultures from agar *h*, mixed with bouillon and injected into a mouse, caused death in sixty hours (a decidedly diminished virulence). From the blood of this mouse cultures of typical bacilli were obtained. Agar *i*, infected from the thick agar culture freely exposed to the formaldehyde gas, showed but a slight growth at the end of twenty-four hours, and at the end of three days the growth was not profuse. Agar *j* and bouillon *k*, containing the silk threads, remained sterile.

Diphtheria. — Bouillon *a* and *b*, containing the pieces openly exposed, showed no growth after a week.

Typhoid. — Bouillon *a*, with the piece that had been openly exposed and bouillon *b*, with the piece that was placed between two strips of cloth, both failed to show growth of typhoid. (Bouillon *b* was contaminated by a surface growth of a bacillus from the air. The under stratum of the bouillon was clear.)

Staphylococci. — Bouillon *a* (openly exposed pieces) also was sterile at the end of a week.[4]

[4] All of these tubes were observed for about three weeks. It may be said here that in this, as in the experiments to follow, several of each of the different classes of expo-ed pieces were placed in different tubes; that by this procedure each test was therefore in reality repeated two or more times, and in cases of contamination other tubes could be relied upon.

(2) *The tubercular sputum* that had been exposed to the formaldehyde was (as in the case of the control sputum) mixed with sterile water, and a large syringeful was injected into the abdominal cavity of a guinea-pig (weight 520 grammes).

(3) Several tubes of bouillon, containing portions of the horse-hair from the centre of the pile above mentioned, taken immediately after opening the room, remained absolutely sterile at the end of three weeks.

Cultures that were made (immediately after entering the room) from dust from one corner of the apartment produced in twenty-four hours profuse growth of a small spore-forming bacillus (not pathogenic for white mice).

In the desire to prove that the solution of ammonia in which the infected pieces were washed had no absolute inhibitory influence on bacterial growth, pieces of infected cloth that had not been exposed to the formaldehyde were washed in the same two-per-cent. ammonia solution, and placed in agar and bouillon tubes. These tubes showed, without exception, profuse growth of the respective bacteria in twenty-four hours.

SECOND EXPERIMENT.

In this instance were used anthrax spores obtained from a culture from the blood of a mouse, dead in twenty hours after infection; also diphtheria, typhoid and staphylococcus albus.

As the results of the preceding experiment were satisfactory for superficial disinfection of the bacteria employed, most of the infected pieces were placed in the following trial between layers of cloth or between mattresses.

Owing to the fact that in the previous trial growth was obtained from cultures from the dust from a corner of the room, after its exposure to the formaldehyde, pieces infected with anthrax spores, diphtheria and typhoid were placed in the same corner, as far as possible from the disinfector. Control cultures in every case were made, and showed profuse growth of the respective bacteria.

In order to determine the effect of the gas upon various articles, there were placed in the room pieces of fine cloth, soft and hard rubber, brass, gold, polished wood, etc.

To determine the effect on the living organism several white mice and a rabbit were confined in the room during the time of exposure. The dark curtains over the windows were left open in the first trial, but were drawn in the following. At the end of twenty-five hours the room was opened. The animals were found lively and, although carefully examined, showed themselves in no way different from such as had not been so exposed. Especially noteworthy is the fact that in no case was conjunctivitis present, and I may here mention that, in my own case, although the irritation of the gas was quite severe for the first few moments after entering the apartment, it soon subsided, and I was able, without any discomfort, to remain over an hour with doors and windows closed. No conjunctivitis ensued.

Although it was proven in the first experiment that the washing of the pieces in a solution of ammonia of a strength of two per cent. did not prevent the growth of the bacteria, yet in this case only a one-per-cent. solution was used, the pieces were allowed to remain therein somewhat longer than before, and were afterwards washed in sterilized water. From all of the

pieces a portion was placed in bouillon, another portion on agar. The tubes were, as before, kept in the incubator, at a temperature of 37° C. The arrangement of the pieces, their places in the room, and the results, may perhaps be better shown in the following table. The concentration of the formaldehyde in this trial was approximately one and one-half grammes per cubic metre air space, that is, 145 tablets (Table I).

In summing up the above results we find that the pieces infected with the anthrax (spores), when transferred to bouillon and agar, gave no evidence of containing living germs at the end of a week's time in the cases where the formaldehyde gas had free or comparatively easy access to the infected pieces, that is, where the pieces lay openly exposed or between two layers of cloth (anthrax *a'* and *b'*).

At the end of a week's time about a cubic centimetre of the bouillon in each of these cases was injected into the peritoneal cavity of white mice. The pieces on agar were washed in bouillon, and this bouillon was also injected into mice in a like manner. These mice showed absolutely no sign of infection at any time, and were, without exception, living two weeks later. It would appear, therefore, as if there could have been on these pieces not only no virulent organisms, but also no bacilli or spores capable of germination.

In the case of anthrax *c'*, on the other hand, profuse growths of typical anthrax bacilli were present at the end of forty-eight hours both in bouillon and on agar. As will be noticed, these were the pieces that had lain between mattresses.

In the case of diphtheria no trace of these bacilli could be discovered after ten days in any of the tubes. The same was also the case with typhoid and staphylococci. The tube containing typhoid *c'* was contaminated and this fact may possibly have affected the further growth of the typhoid bacillus. This was so only in the bouillon; the agar tube remained absolutely sterile.

From the bouillon several agar and gelatine "plate cultures" were made in the effort to isolate any bacilli of typhoid that might be present, but failed to indicate any trace of this organism.

Some of the bouillon tubes were contaminated by a large moving bacillus, with rounded ends. In every case where this occurred — in five tubes, including the typhoid above mentioned — a considerable amount of the bouillon was injected into mice. The bacillus (bacillus subtilis?) proved non-pathogenic for these animals, and they were all living, without sign of infection, two weeks later.

It is of interest to note that a culture made from the dust in one corner of the room, immediately after opening the room, showed profuse growth of the same small spore-forming bacillus, apparently, as that found in the first experiment. It produced no effect when injected into white mice; for these animals, therefore, non-pathogenic.

(To be continued.)

TABLE I.

Bacteria.	Result of Control Cultures.	Position of the Infected Pieces.	Result after 25 Hours' Exposure to Formaldehyde. Cultures in Bouillon and on Agar.
Anthrax (spores)			
a'	Profuse growth in 24 hours.	Openly exposed in the above-mentioned corner.	Bouillon: No growth in 7 days.
b'	" "	Between two layers of cloth on a table.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
c'	" "	Between two mattresses.	Bouillon: Growth of typical bacilli in 48 hours. Agar: Growth of typical bacilli in 48 hours.
Diphtheria			
a'	" "	Openly exposed in the above-mentioned corner.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
b'	" "	Between two layers of cloth on a table.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
c'	" "	Between two mattresses.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
Typhoid			
a'	" "	Openly exposed in the above-mentioned corner.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
b'	" "	Between two layers of cloth on a table.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
c'	" "	Between two mattresses.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
Staphylococcus (albus)			
a'	" "	Between two layers of cloth on the floor.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
b'	" "	Between two mattresses.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.

MEDICAL TESTIMONY ON INSANITY AS AN EXCUSE FOR CRIME; REPORT OF A CASE.[1]

BY JAY PERKINS, M.D., PROVIDENCE, R. I.

Mr. President and Gentlemen of the Massachusetts Medico-Legal Society: — It is, perhaps, presumption on my part to bring before you the subject which I have to-day, for I fully realize that I am not an alienist and am very poorly equipped to discuss questions relating to insanity. I come before you simply as a student of legal medicine, but in legal medicine, as I am by experience fast learning, the question of sanity and insanity is becoming of more and more importance, and unless we who are doing general medico-legal work are willing to bow submissively to the expert alienist, we must consider the subject by ourselves, and it is in this attitude that I present this case and discussion before you to-day.

Much has been written and said as to the medical-expert witness, and I will be brief in giving my opinion

[1] Read before the Massachusetts Medico-Legal Society, Oct. 4, 1899

of him and his attitude towards the case. In the last quarter of a century the science of medicine has in many ways made a phenomenal advance, and things which twenty-five years ago would have been looked upon as wholly fanciful are to-day undisputed and form part of the basis of all our work. This is true of many of the theories of the past; they are now facts; but this is not true of all of the theories of the past, many of which are now never mentioned. In medical discussions in society meetings, it is well to give all new and advanced ideas, as there they will be discussed by medical men and their truth or falsity can be properly estimated; but in courts of law, where often the only hope for the lawyer for the defence is to make out a disagreement of medical experts, we should be more conservative. Theories or suspicions, especially when advanced by a man of reputation as facts, may, and often do, give to a jury sufficient cause for a reasonable doubt, and thus do much harm to the cause of justice and destroy confidence in medical witnesses.

The aid of law makers has been invoked to bring the medical witness into better standing by giving the court the power to appoint experts. We have a very good law of this kind in Rhode Island, but you cannot make a set of experts into a jury, as you would be doing if you made their decisions final. They must be cross-examined and this cross-examination will bring out differences unless they are conservative and hold only to that which is well known. Then, too, you cannot prevent the lawyer from putting on independent medical witnesses. So this matter cannot be fully regulated by law any more than you can reform a drunkard by law. Laws may help, but the real reform must come from the physicians themselves, and the medical witness should in no sense be a partisan or advocate.

In the trial which I am about to report the prosecution had three, and the defence five, physicians, for the most part well-known and eminent men in the profession, who were advising the attorneys as to what questions to ask. As to the propriety of this, I am in doubt. How far does our duty to the case go in this respect and where does our professional honor demand that we desist? Especially with us as medical examiners: what is our proper attitude to the prosecution?

There is no class of cases in which all that has been said is truer than where there is the question of sanity. Psychology is an extremely complex science, and when one of Massachusetts' leading psychologists, whose writings are frequently quoted, goes before the Legislature and prevents the passage of a law which limits the substitution of ignorance and superstition for knowledge and science, and does it through reasoning from his psychological tenets, are not we, who are trying to do scientific work, justified in asking for some good proof and evidence of these tenets and the deductions therefrom, instead of blindly accepting them?

On the night of February 12, 1899, I was called, in my capacity as medical examiner, to the house of Mr. Amos D. Palmer, in Cranston, R. I. The house is just beyond the city line, but the examiner for that district could not be found. I arrived at the house at 11.30 P. M., and then learned that Mr. Palmer and his wife had been celebrating the eighth anniversary of their marriage on that day. Four guests, two ladies and two gentlemen, had been present. At about five o'clock the gentlemen went to the billiard-room, where they remained until 8 P. M., when they went down stairs, and soon after the guests went home.

The history of the case for the next few hours I give as I learned it that night and from notes taken at the time the statements were made to me by the servants, and not just as it was brought out at the trial, as I believe the former to be the more accurate.

After the guests were gone, Mr. Palmer went down into the basement, as he said, to fix the furnace; when he came up he and Mrs. Palmer had a light lunch, during which they had a quarrel concerning his going down to fix the furnace, Mrs. Palmer claiming that what he went down for was to get some liquor, and that he should let John take care of the furnace. The cook told me that he was evidently under the influence of liquor at the time they had the lunch. (At the time of the trial the cook could not remember of any such condition.)

Mr. and Mrs. Palmer went upstairs about nine o'clock. At 9.15 the two servants, Mary Farrell, the cook, and Margaret Sullivan, the second girl, were in the room over Mr. Palmer's and heard sounds like "knocking," and heard Mrs. Palmer scream three times. The cook went downstairs to the first floor, and walking through the rooms of that floor heard Mr. Palmer talking, but did not know anything that he was saying. She went back to her room again, and in about ten minutes Mr. Palmer called to her; "Mary," and upon her answering, said, "Did you hear that?" She asked, "What was it?" and he said, "I fear I have killed her." When she found that Mrs. Palmer was dead, she said, "Oh, Mr. Palmer, what have you done?" He replied, "She tried to kill me first," and then said, "Oh, what have I done; what have I done?" Mrs. Palmer was then lying with her head on a hassock. Both Mr. and Mrs. Palmer were dressed in night clothes and blanket wraps.

The cook then called the coachman, John Devine. When he reached Mr. Palmer's room, Palmer was naked, having taken off his night-dress and was apparently preparing to dress himself. At the time there was nothing said as to any frenzied condition, though the counsel tried to draw this out at the time of the trial. He did say, however, that Palmer went to a drawer and took out a revolver and wanted to load it in order to kill himself, but was restrained by his coachman. There were two revolvers given to me after my arrival at the house; one contained empty shells, five of 32 calibre, and presented evidence of having been recently fired; the other was empty and had not been recently fired, and, as was afterwards shown, it was not in good working order. He kept these in different places, and had gotten the loaded one first and to use in shooting his wife.

Palmer then telephoned to his physician, Dr. Carr, and told him that he had shot his wife. Dr. Carr was not able to go, and asked Dr. George D. Hersey to go in his place. Dr. Hersey went out, arriving there at a little before eleven, and about two hours after the shooting. Palmer was then fully dressed and met him on the landing of the stairs. After Dr. Hersey found that Mrs. Palmer was dead he told Palmer so, and he then became somewhat excited and again said he wanted to kill himself. He repeatedly stated his desire to commit suicide.

I arrived at the house at about 11.30, and saw Palmer a moment then, as he was sitting quietly on a sofa with Dr. Hersey. I went into the room where his wife's body lay and made an examination of it. Dr. Hersey came in with me, but in a few moments

we heard scuffling, and the coachman said Palmer was trying to kill himself by taking some poison. Dr. Hersey then stayed in the room with him.

After examining the body, I telephoned to the chief of police and went in and talked to Mr. Palmer and was then with him much of the time for a couple of hours. His breath smelled strongly of liquor, and upon questioning him as to what had occurred he claimed that he could remember nothing from the time he and his guests were in the billiard room until after Dr. Hersey arrived. However, he certainly seemed to realize what he had done and repeatedly exclaimed, "Why did I do it; why did I do it? I couldn't have done it." At no time, however, did he seem to doubt that he had killed his wife. When we stopped talking, he would walk across the floor with his head slightly bowed and an anxious expression upon his face and then say, "Why did I do it; why did I do it?" Upon questioning him as to why he did it, he said that all that he could lay it to was the whiskey and beer that he had drunk; that he had had four drinks of Mount Vernon whiskey and several bottles of beer; he ought to have known better than to have drunk that whiskey, "as Mount Vernon whiskey always did him up." He told me that he drank the whiskey when he went down to fix the furnace, and drank the beer in the billiard-room. He said that he and his wife lived happily together; that "they had their little quarrels as everybody does," but that they made up and were happy again, and he could remember of no quarrel this night. All of the time he talked rationally, but would have, apparently, great remorse when we stopped talking. I saw nothing, however, to indicate any frenzied condition and certainly no stupor or mental abstraction. It was impossible to get his mind off from what he had done. If we talked about anything else, the moment we stopped talking his mind went back at once to the shooting. He said that he was a murderer; that he would give himself up to the police. He said this before, as well as after my arrival.

When the police arrived and rang the bell, before he saw them he said, "There comes the police; it will be a charge of murder."

At about eleven o'clock, Dr. Hersey gave him 30 grains of bromide of soda and at twelve o'clock another 30 grains. He became somewhat quieter and calmer after one o'clock; though, as previously stated, there was nothing approaching a frenzied condition — certainly not after my arrival.

Between four and five o'clock, when in the presence of the officers, he vomited, the vomitus smelling strongly of liquor.

At about the time I notified the police of the murder, Dr. Hersey suggested to Mr. Palmer that it would be well perhaps for him to notify his lawyer of what had taken place. Mr. Palmer told him his lawyer's name and Dr. Hersey telephoned.

It was an intensely stormy night and the officers stayed at the house all night, taking Mr. Palmer to the court the next morning. He had slept none, and ate no breakfast. He was somewhat nervous at the court, and at the suggestion of his lawyer pleaded "Not guilty," but on leaving the court house for the prison, he said, "My God, I am a murderer."

The next morning I turned the case over to the medical examiner of that district, Dr. A. H. Longfellow, and he made an autopsy, at which I was present. There were six bullet wounds, five of entrance and one of exit. One bullet entered the left arm just above the wrist on the back side and there was a corresponding wound of exit higher up on the inside of the arm, and the bullet was found imbedded in the sleeve of the night-dress. There was a bullet wound at the lower border of the left nipple; another three-quarters of an inch lower and a little to the outside; another three inches diagonally below and outside the nipple, and another three inches above the nipple. One bullet went straight in, passing through the heart and the root of the right lung. The others had a downward tendency, some more, some less; but all passed through some part of the stomach. One bullet was imbedded in the left loin. There were corresponding openings, about which the loose wool was much burned, in her blanket wrap.

By subsequent examinations, I found that the revolver was held at a distance of not less than five and not more than ten inches from the blanket wrap, and from the relations of the holes in the burned areas I determined that if the revolver was held as is usual, one of the shots was fired with body erect and the others as it was falling. This was determined by the holes being on the trigger side of the burn.

There was no disarrangement of the furniture or anything about the rooms which would indicate any struggle. Dr. Hersey and I remained at the house all night, and neither of us had any doubt but that Mr. Palmer's condition was due to alcoholism and remorse.

Now let us look briefly at Mr. Palmer's earlier life so far as it is known. Most of those associated with him, and all associated with him intimately, are dead. His father died when he was about eighteen months of age, and from that time until he was a man grown he was almost exclusively with his mother or nurse until the death of the former in 1890. Their family physician during his childhood and his nurse are also dead, so that his early history is not very definite. His mother never sent him to school and never allowed him out of her sight, or that of the nurse, during his childhood. He never associated to any extent with any other boys, as they did not enjoy his company enough to come to him, and his mother would not let him go from home. There is no doubt but that there was some good reason for this. The defense claimed that the reason was, attacks of epilepsy. The evidence on this point was not over strong, but some light attacks of epilepsy were fairly established, the best evidence being that of a barber. The evidence does show that his mind was not fully developed and there is other evidence which was not introduced into court which shows a marked mental deficiency, but it seems to me that there is still a chance to question whether the attacks introduced were really epileptic or whether they were merely manifestations of an undeveloped mind. The evidence was skilfully handled with a view of showing that he had epileptic seizures. All of the witnesses for the prosecution, excepting those on the case officially, had been skilfully brought into an extremely sympathetic attitude to the prisoner and were practically witnesses for the defence.

When sixteen years of age he was in Florida with his mother and there began to drink liquors, which habit he kept up to the present time. About two years later, after a summer at Narragansett Pier, he had an attack of delirium tremens, and drank very hard until

within about three years of the homicide, during which latter interval he drank less, but still considerably.

In 1891 he married without his mother's knowledge, a divorced woman whom he had known intimately for several years. It was at about this time that his mother died and he now passed from his mother's influence to that of his wife. He loved her passionately, and, as I think is usual when the higher faculties of the mind are dwarfed, the emotions and animal passions stood out more strongly. As had the mother, so now the wife possessed the stronger mind, and when he was not under the influence of liquor she ruled his weaker mind easily. He was, however, at times jealous of her and apparently not without cause. They always had quarrels, and about five years ago he had shot at her, the bullet striking the bed. One of the servants reluctantly acknowledged she had heard him threaten "to throw her down stairs and break her neck."

In recent years the only thing that they could bring up to show a tendency to epilepsy was his falling off from his wheel one day while out bicycling with his wife, and at another time while riding in a carriage he had a severe headache, becoming partially unconscious, but this evidence was very shaky.

When Mr. Palmer was on the stand he claimed that while in jail he woke up several mornings with his tongue sore and swollen and bloody foam in his mouth, which was, however, never brought to the attention of the physician, and in fact, his lawyers would not allow him to see the physician of the State institutions whom the State desired to have examine him.

While on the stand Palmer answered the questions more intelligently than several of the other witnesses and was attentive throughout the trial. He claimed that he could not remember when the guests went home the night of the shooting; he could remember bringing the beer up to the billiard-room but could not remember drinking any of it (though that night he remembered it distinctly), and the next thing he could remember was, "I remember bending over my wife, who lay on the floor in my bedroom and remember lifting her head on the hassock and exclaiming, 'My God, she is not dead!'" This all faded out like a dream, and the next thing he remembered was being in the sitting-room and two gentlemen coming in, "one of whom must have been a doctor, because he gave me something bitter to take," and after a long time two other men came in. He also remembered his dog coming in and lapping his hands and face, and later of having a cup of coffee which made him sick. He claimed that the first that he realized that anything was wrong was "when the officers were there and one of them kept dogging him around"; then he recalled going to court and to jail; all the rest he said was a blank, yet he remembered that his wife had on a light blanket wrapper, as brought out on the cross-examination, though he claimed in answering his lawyer's questions that he could not remember his wife's face.

In relation to attacks of epilepsy, he testified with a good deal of minuteness to attacks which he had had. The first he could remember were when he was eleven or twelve years of age; they came on with an "all-gone feeling and a queer feeling in the head," and he lost consciousness. After coming out of the spells he would be in a kind of stupor. He could remember the time he fell from his bicycle; he was not feeling well in the morning, ate little breakfast, and started on the ride soon after breakfast. He did not at any time lose consciousness, but felt dizzy and fell from his wheel, but with his wife's assistance he got out to one side of the road and rested for about half an hour, after which they went home slowly, he feeling "used up."

He remembered having delirium tremens and getting so drunk he could not walk steadily on a number of occasions; that sometimes the boys put him to bed. One time after drinking champagne he was taken to the City Hotel and put to bed, not knowing where he was when he awoke the next morning, but this knowledge came to him gradually.

The physician who attended him in recent years knew nothing of any epileptic attacks; he had attended him after some of his drinking spells and told him as a means of frightening him, that if he did not stop drinking they might have to put him in an asylum.

As before stated, all of the witnesses, even those for the prosecution, had been brought to a very marked degree of sympathy for the prisoner, and this was so evident in the change in the testimony of those with whom I talked the night of the shooting, that I could not place much reliance on what most of the witnesses had to say as to details. One of the witnesses testified that he saw him have spells when a boy and that he frothed at the mouth. Under cross-examination, however, he acknowledged that he had not thought of the frothing until the attorney for the defence had questioned him on that point at some time before the trial and fifteen to twenty years after the occurrence. This sympathy for the prisoner extended to the relatives of the dead woman, one of whom, a sister, kissed Palmer one day in the court-room. The servants were all kept at the house on good pay until after the trial, and the reputation of his wife gave him much sympathy from the public in general. The most of the evidence put in by the defence was of little real value. There was one witness, a barber, however, who testified that he had seen Palmer in attacks of epilepsy while getting his hair cut. On one of these occasions his eyes bulged out, he became purple in the face, grew rigid and cried out, "Oh, oh, oh!" His mother then took him, and the hair-cutting was completed two or three days later. The barber then testified that Palmer would sometimes take up some of the hair that had been cut off and say, "Isn't that funny hair; look at it jump; it is alive"; and sometimes would complain of the furniture moving about the room. Also during some of the attacks which Palmer had while his hair was being cut, and in which he lost consciousness, he was sitting in a straight-back chair and yet he never fell out of the chair.

I believe that what I have said will give you a fair idea of the case and the character and substance of the testimony. The defence had not put in all of its testimony, when it was agreed that the experts on the case should confer as to the prisoner's sanity or insanity. This they did, and at the next session of the court, the following statement was presented:

WILLARD B. TANNER, ESQ., *Attorney-General:*

Dear Sir, — We, the undersigned, having examined Amos D. Palmer as to his mental condition, with reference to the indictment against him for the killing of his wife on the night of February 12, 1899, hereby report that we jointly agree in the opinion that he is the subject of mental disease, and that the act was committed under the influence of that disease; and, in our opinion, is therefore not responsible for his homicidal act and that proper measures

should be taken to protect him and the public from further consequences of his mental disease. Signed: P. M. Wise, C. P. Bancroft, G. F. Keene (experts for the State) G. F. Jelly, Edward Coles, Walter Channing, W. H. Palmer and F. H. Peckham, Jr. (experts for the defence).

The prosecution and the defence then both asked that the jury be instructed to bring in a verdict, "Not guilty by reason of insanity." The court, however, stated that it could not direct the verdict, and suggested that an expert be put on the stand from each side that the jury might bring in a verdict from evidence.

All of the experts were placed upon the stand; their evidence was in conformity with the statement made in writing by all, excepting that the defence laid stress upon the epileptic element, Dr. Channing going so far as to say that "he was probably in an epileptic condition at the time of the homicide."

There was evidence presented to the experts showing the weak mind, which was not of a character to be presented in open court, but I am informed there was nothing of any weight as to epilepsy; all agreed that the nature of his mental affliction was imbecility, and in this I certainly agree; and I approve fully the finding of the jury, "Not guilty by reason of insanity."

Dr. Bancroft testified, in part, that Palmer possessed a defective will power and at the time he committed the act he was unconscious. What alcohol he took may have aggravated this condition, but under it all lay the fact of his imperfect mental condition; that he was a congenital imbecile and that the disease was incurable and progressive. It seems to me that this covers the case and is all that is justified by the evidence when carefully sifted and considered.

In all of our work I know that it is hard not to let our judgment be swayed by our sympathies and our sympathies go to those whom we are trying to help, and though it is not always easy to form or express just judgments, if there is any one in the world who needs to be just and fair, it is the medical expert, yet we all know to what depths he has fallen in many cases in the opinion of the courts and his brother physicians and the people in general. Much of this feeling is certainly unjust, but not all of it. It is impossible for the courts or the laity to keep abreast of the advance in medical knowledge. Law is built upon precedent; medicine is always reaching out towards the unknown, and at each advance tries to make use of all it can reach, and each day sets new standards, which unfortunately do not always bear up under the weight of new structures. They have not been properly tested, and when used, break under the burdens they should bear if sound, or perhaps break because they are not made for the burdens which are placed upon them. It seems to me that this is the condition of expert testimony on "insanity as an excuse for crime" to-day. The alienist has given us much new material in his line, but is he not sometimes too much flushed with his successes and not calm enough in his opinion? There are gynecologists who can find but few healthy ovaries, and but few ovaries are removed post mortem which are absolutely normal, yet every woman should not have ovariotomy performed because she has a pain in the side or back. There are a great many persons who do not come up to the physical standard set by Dr. Sargent as the normal, and yet they are able to do good work, though some will not work. There are but few minds which upon careful examination are at the standard of perfection, yet all these are not insane even if they do what some people consider insane things. In judging of a person in a doubtful case many things must be considered, such as his education, environment, habits, efforts at self-control, and in fact his whole life.

Insanity is now the defence resorted to in all cases where there is no other, and an able counsel can do much to establish insanity in many cases where there is no insanity, the enthusiastic and sympathetic expert helping him. In the case I have related the experts were particularly eminent and honest. Those from Massachusetts you all know better than I, and I know them well by reputation and know nothing against them in any way, and for the very reason of my opinion of them, I have studied this case and their evidence and acts, yet I cannot come to agree with them in all they have said. Was this man Palmer in an epileptic condition at the time of the homicide? I will not review the case farther than to recall a few features. He had been drinking a strong liquor which he said was "always too much for him." He knew enough to know where to go for the loaded revolver first, and later for the other. Ten minutes after he had done the shooting, he told the servants that he had killed his wife, but that she had tried to kill him first. Have you known of an epileptic murderer pleading self-defence? Then he wanted to commit suicide. Do epileptics commit suicide while still under the influence of the seizure? He and his wife had a quarrel about his drinking but a short time before the shooting. He had shot at her before and had threatened her. There was no stupor, no absolute forgetfulness. He remembered bringing beer into the billiard-room, he remembered putting his wife's head upon the hassock after killing her, he remembered the doctor and other men coming in, he remembered his dog, the coffee, leaving the house, and yet he could not remember the most of what had taken place that night. At no time after the shooting could his mind be kept from it, and if drawn away, would go back almost at once. He could talk rationally during most of the time he claimed everything was a blank. His breath smelled strongly of liquor and he vomited liquor. He had a mind which was congenitally weak. Now, gentlemen, granting even that he had epileptic attacks during childhood, do these things indicate epileptic seizures, or an epileptic condition at the time of the crime, or was he in a subconscious condition due to the action of alcohol on the weak mind?

It is true that a person may have attacks of epilepsy only few in number and very slight, and then be free from it for a long time; then in an epileptic condition commit murder of which he is wholly unconscious and cannot believe. Probably men have been hanged for murder while protesting their innocence though guilty, because the murder was done under the epileptic influence, but is this a sufficient reason for saying that a murder was done during an epileptic condition because the man has had an epileptic seizure at some time during his life? There is no reason why an epileptic may not get under the influence of drink and do as others have done who never had an epileptic seizure. I know that cases are reported where a man has had but one or two epileptic seizures dnring his life and has committed murder during one of these, but is it safe to draw marked inferences from this and to be ready to support the belief of epileptic homicide in all cases where the person has had an epileptic seizure earlier

in life, unless all the indications point that way? It is easier for a man who has shown no signs of insanity for some years to get out of an asylum than for a murderer to get out of prison. When a man is committed to an asylum he is committed until cured, and when his sanity is proved he must be released, and, in case of murder, cannot be retried. If a man is committed to prison, there are provisions, at least in Rhode Island, by which if insane he can be transferred to the insane asylum. It is not, however, the effect in an individual case which I would oppose, but the principle of being too radical in expressing opinions as to insanity, because of the effect thus produced upon the reputation of the medical witnesses in the opinion of the court, bar and jury, and the cause of justice as a whole.

In this case time will probably show whether Palmer is an epileptic or not. The State wisely intervened and said that he must remain in the State and he is now in Butler Hospital. The records of that institution as yet show no epileptiform attacks, and I have had as a patient a man who as an attendant had the care of him for a time, and who tells me that the only thing he noticed as different from other men was a silly laugh; this laugh was used at the trial as an evidence of an unsound mind.

As a result of imperfect action of cortical areas, we can readily conceive that unrestrained reflex psychical activity may take the place of intelligent thought, that normal waking consciousness and memory may both be absent, and do we not see just this kind of automatism in somnambulism, in the delirium of fevers, in the peculiar mental state attendant on poisoning by cannabis indica, alcohol, and occasionally profound nervous shock? In this case I believe that the loss of consciousness was due to alcoholism and not to epilepsy.

Clevenger[2] says: "It is a common plea of inebriates who have been arrested for all sorts of criminal acts, that they have no recollection of what they have done, and it is still more common for an inebriate to recover from a spell and to experience great mortification over what he has done, with no recollection of his disgraceful performance. The resemblance of such phenomena to epileptic phases is very close, and it is to be remembered that alcoholism may be attended with epilepsy, including petit mal and convulsions, and in the relation of cause and effect. Sometimes a hazy recollection of drunken acts is preserved afterwards, or here and there a more or less distinct memory of things spots the debauch."

Dr. C. P. Bancroft has reported four cases of "subconsciousness" where there was no reason to suspect epilepsy, and others are on record.

These facts, it seems to me, ought to caution us to be conservative in our opinions before the courts, and I believe that thereby the standing of the medical witness would be raised.

The following is a stenographer's copy of the testimony of the experts as given on the witness-stand:

Dr. George F. Jelly:

I have seen Amos D. Palmer at the jail and at the court. I have made six examinations of Mr. Palmer at the jail, the first time being thirteen days after the homicide, on the 25th day of February, this year. I have no doubt, upon the examination which I made at the jail, from what I have seen and heard in court of him and his testimony, from the evidence that has been given here in court, and from frequent visits to the prisoner since he has been confined in this house, I have no question that Amos D. Palmer is a man of unsound mind, that he was of unsound mind and beyond his control in mental disease at the time of the homicide; that he is wholly oblivious as to this crime by reason of his mental disease; that he is in that condition where he needs care and restraint for the treatment of his mental disease. I have no doubt also that he is absolutely honest in everything he has told you. I do not think he is capable, by reason of defective mental process, of conceiving or concocting the plan. I do not think he could combine circumstances which would enable him to make a plan of defence. I think he is telling the truth when he says it is out of his mind, and that he has no memory of the event or of his wife's features; it is absolutely true, so far as I can judge. I think he was very fond of his wife. Frequently, as a child, he has shed tears in speaking of her, and I have no doubt if to-day he could recall the crime he would not attempt to conceal it. And for that reason, I believe he should be treated as a defective, diseased man, put under care, and for himself and for the community he should be treated with the hope of doing him good and protecting him. I do not think that Mr. Palmer will ever be a strong man mentally. I do not think he has ever been. I think, under good care and treatment, he would learn better control than he has now. I do not think he will ever be a strong mind. I am afraid the disease is progressive.

Dr. Peter M. Wise:

I consider that Amos D. Palmer at the time of the homicide was unconscious of the act, that his will was impaired by reason of his mental disease, and that he was wholly irresponsible for the act. I have had well-attested facts presented to me that have not been already presented in evidence. In respect to the prisoner's mental condition, I consider the disease an incurable disease, and one very likely to progress.

Dr. Charles P. Bancroft:

I think Amos D. Palmer was not responsible for his act at the time he committed it. It is my opinion that he was in a state of unconsciousness, and that he possessed defective will power, imperfect control, and that he should be in no wise held accountable for his act at that time. I think what alcohol he took may very likely have had the effect of aggravating his already weakened mental condition, but underneath all is the fact of his imperfect mental condition, which, in my mind, dates from birth. I should say that he was a congenital imbecile. I am sorry to say that I think the disease is incurable and progressive.

Dr. George F. Keene:

In my opinion, on the 12th of February last Amos D. Palmer was irresponsible for his actions at the time by reason of mental disease. He is incurable, in my opinion; the disease is progressive.

Dr. Edward Cowles:

I have visited him five times previous to the trial, and have heard the testimony that has been given. In my opinion, he was not responsible, not in a condition of responsibility, at the time of the homicidal act. He was under the influence of a disease with which he has been affected from his birth, a defective physical and mental condition, constituting a form of disease. In addition to that, in my opinion, he has had the disease of epilepsy, which has contributed by its effects to the mental incapacity. I consider that, in consequence of that disease, there are times when under its influence he is not responsible and has not control of his conduct; that he is not responsible for what he does. I believe that the events of the night of February 12th are to him a blank, and so far as I have been able to ascertain them, and from all the evidence which we have been able to learn, that is consistent with an attack of that disease at that time, and that

[2] Medical Jurisprudence of Insanity, page 644.

he was not then conscious of the nature of his act, or at all responsible for it. In my opinion, he should be placed under medical care, both for his own sake and for the protection of the public from further possible consequences of his condition; for his own sake, that he may receive the benefit of treatment it is possible that he may receive. I believe the disease is progressive and incurable.

Dr. Walter Channing:

I think at the time of the commission of the homicide that Amos D. Palmer was irresponsible. I think that from birth he has been of feeble mental organization and, as a result of a very careful physical examination that I have made of him, as well as mental examination, that he would now be classified as a high-grade imbecile. I think also that he has been an epileptic, and that, probably, on the night of the homicide he was in an epileptic condition. I think that as a result of this general condition that on the night of the homicide he was the subject of mental disease and that the act was the result of the mental disease and that he was on that night irresponsible. I think the disease will be progressive and I see no chance of cure.

Dr. Fenner H. Peckham:

I consider that at the time of the homicide, February 12, 1899, that Amos D. Palmer was in an unconscious condition as a result of mental disease, combined with an epileptic attack, and was therefore not responsible for his act which he committed. I do not think he will recover from this disease, and I think it is a progressive disease.

Dr. William H. Palmer:

My conclusions are that Amos D. Palmer, when he fired those shots that killed his wife, did not know what he was doing; he was unconscious of what he was doing; he had no control of his actions, and that all these conditions were the outcome of the disease from which he was at the time suffering and from which he has been suffering from his earliest youth. In my opinion, that disease was of the character of epilepsy, for I know of no other disease that would so arrest and retard mental development like that. I think he was therefore wholly irresponsible for his act on the night when he fired those shots. The disease will progress; perhaps in the best years of his life the advance would not be so rapid, but it will be onward, at times slow, at other times fast.

FOOD POISONING AND METALLIC IRRITANTS.[1]

BY CHARLES HARRINGTON, M.D., BOSTON.

In the discussion which followed the reading of a report of a case of supposed ptomaine poisoning at the last previous meeting of this Society, reference was made to the great difficulty often experienced in determining the correct diagnosis, owing to the close resemblance in the symptoms produced by ptomaines and by arsenic, and in response to a question bearing on that point the statement was made that in a doubtful case recovery pointed to ptomaines and a fatal termination to arsenic as the cause. As this was allowed to pass without comment or contradiction, whether it was or was not intended to be taken seriously, it seems not out of place to call attention to certain points of difference which may be observed even in those cases in which the general train of symptoms points equally well either way. But first of all, with regard to the diagnostic point above mentioned it must be said that fortunately not all cases of arsenic poisoning terminate fatally, even in the absence of treatment, and unfortunately not all cases of poisoning by ptomaines recover under most careful management.

Before passing on to a consideration of the effects produced by arsenic and other metallic irritants and by food poisons, their resemblances and differences, attention must be called to certain misapprehensions concerning ptomaines and to a common laxity of the use of the term. Ptomaines are organic bases formed by bacterial action on nitrogenous organic matter of both animal and vegetable origin. They are sometimes designated as animal alkaloids, a term which in view of their possible vegetable origin is manifestly incorrect. It is a common belief that they are all poisonous in their nature, but while some of them are decidedly so, the majority of those thus far isolated are quite incapable of exerting any harmful influence. Different kinds of bacteria form different kinds of ptomaines and the same organism may produce different kinds according to the nature of the substance and according to the conditions, such as temperature, access of air and other circumstances under which it works. In contact with certain kinds of material it may produce no ptomaines, or harmless, or very poisonous ones; and acting upon one and the same material under differing conditions it may be capable of evolving a variety of compounds equally different in action. Again, the same material may yield under like conditions poisonous or non-poisonous ptomaines, or none at all, to different varieties of bacteria.

We have fallen into a common habit of ascribing to ptomaines the effects of all forms of organic poisons due to decomposition of food materials, regardless of the fact that other substances than organic bases are formed by bacterial activity. To these substances various names have been given, and at the present time there is considerable difference of opinion as to their applicability. In view of the fact that this confusion exists, and that in any case of poisoning of this sort the nature of the toxic substance cannot be known until it has been demonstrated by careful analysis, I would suggest that it would be preferable to adopt a general term suggesting food poison rather than a specific one having reference to the particular kind of product, the presence of which is suspected but not demonstrated.

In all cases of food poisoning the effects produced are due either to substances formed by bacterial agency in the food itself before ingestion, or to toxic substances developed within the body after infection by the contaminating bacteria. They vary widely in character, sometimes closely resembling those caused by metallic irritants, sometimes suggesting the presence of narcotics, and again being mistaken for infectious disease of common occurrence. For the purpose of this paper only those cases in which the symptoms resemble those of poisoning by metallic irritants will be considered. The individual members of the latter class cause practically the same group of symptoms, but with the exception of arsenic they cause such peculiar metallic tastes that their effects are not very likely to be mistaken for those of bacterial products. Therefore, the discussion may most properly be further limited to the resemblances and differences observable in poisoning by this substance and by foods.

From the character of the onset, no assistance in making a diagnosis can be expected, because of its exceeding variability in both classes of cases. In arse-

[1] Read before the Massachusetts Medico-Legal Society, October 4, 1899.

nic poisoning the first effects may be manifested almost immediately or not for a number of days, even after as many as eight or nine. In one recorded case the first effects were shown eight days after ingestion, and recovery was complete within a short time; in another no symptoms appeared until the ninth, and death occurred on the twelfth. The symptoms generally begin with burning pain in the stomach, vomiting, diarrhea and other evidences of gastro-intestinal irritation, but they may, on the other hand, resemble those of narcotic poisoning up to within a short time before death, when those of irritation may appear. Again, no effects whatever may appear for some hours, and then death may follow very quickly after. Thus, in a case in which nothing remarkable occurred until seven hours after the poison was taken and no signs of irritation until the following day, the latter appeared suddenly, and within a half-hour the victim was dead. The onset in food poisoning may appear almost at once or at any time up to four or five days, and the same food shared by a number of people may affect them at widely different times and with different degrees of severity according to the amount eaten. Sometimes, too, different portions of a piece of meat or of a sausage or other food are unequally altered by putrefactive changes or unequally cooked, and thus produce different manifestations. As is the case with arsenic, fatal termination may occur in much less than twenty-four hours or may be postponed many days. In both classes the vomitus is very variable in character and appearance. It is less likely to be bloody in food poisoning, but may on the other hand be quite devoid of any remarkable appearances in poisoning by arsenic. The stools, too, present no uniformity of character in either case, but they are likely to be bloody in arsenic poisoning and to be extremely and unusually offensive in food poisoning. Diarrhea may be present in neither, but instead there may be obstinate constipation.

In arsenic poisoning constriction and heat in throat, cramps in the calves and elsewhere, coldness of the extremities and of the whole surface of the body, weak, almost imperceptible, pulse, anxious countenance, eruptions of different kinds on the skin, great prostration, headache, stupor and convulsions, are common symptoms, and in food poisoning they are equally so. In short, most of the symptoms caused by the one are commonly observed in the other.

There are, however, three notable differences:

In arsenic poisoning we observe heat and constriction in the throat; the patient often finds it difficult to swallow because of the pain which accompanies the effort. In food poisoning these same effects are among the most constant symptoms, and in addition, swallowing and speaking may be even impossible rather than simply difficult. This is *not due to pain*, as in arsenic poisoning, but to involvement of the nerve cells; there is a genuine condition of *paralysis* of the throat, such as is not seen in poisoning by any of the metallic irritants. Sometimes this difficulty is one of the very first symptoms.

A second point of difference is the condition of the pupil. In most of the reported cases of food poisoning of the class which we are considering a marked dilatation of the pupil had been noticed, and in many, also, great impairment of vision and even total blindness. In some cases the eyes react not at all to light. Rarely, instead of dilatation, contraction of the pupils is noticed, and sometimes the one condition succeeds the other.

A third point of difference is the extent to which the muscular system is involved. In arsenic poisoning there is great prostration, but as a rule the patient is able to stand and walk about, though only with great effort. In food poisoning, on the other hand, it is most commonly the case that the legs refuse to support the body, even when the patient is assisted. In one outbreak, in which over 70 persons were involved, this condition was remarked in almost every case; in another, in which the number of victims was 30, the same condition was noticed in all.

Fortunately, in the matter of treatment, the diagnosis between arsenic and food poisons is not of very great importance. In either case the removal of the offending substances from the alimentary tract by appropriate means and supportive treatment are essential. In doubtful cases the administration of the usual antidote for arsenic can do no harm even though that poison is not present.

In cases of fatal ending the post-mortem appearances are by no means always to be depended upon to clear up doubtful diagnosis. In some cases of fatal arsenic poisoning the lesions are no more extensive than those of food poisoning, although as a rule the latter are slight or wanting.

Clinical Department.

SIMULATED APPENDICITIS.

BY J. G. MUMFORD, M.D., BOSTON.

CASES of simulated appendicitis are so common that it seems as though no new abnormality of the sort could be recorded; yet here is a case which will interest surgeons, I believe.

In a recent address on "Acute Abdominal Symptoms demanding Immediate Surgical Intervention"[1] Dr. M. H. Richardson gave an excellent table, enumerating all such urgent cases, apparently; yet it is hard to say where he would have put this case.

The patient, a young girl of twelve, was brought to the Massachusetts General Hospital. I saw her for Dr. Homans. She was sent in with the diagnosis of appendicitis, made by her physician, and with the statement that an immediate operation seemed imperative. Her past history was a good one. She was a vigorous, well-developed child, with an acute attack of abdominal disease, and this was the third day of her illness. Without warning or known indiscretion in diet she had been seized suddenly with acute agonizing pain in the umbilical region. The pain lasted six hours, when vomiting set in. The character of the vomitus was unknown; at any rate there was some considerable relief from pain for a few hours.

On the second day the pain returned gradually, becoming constantly more severe; situated at first in the right inguinal region, but later extending into the right chest and back. There was then more indefinite vomiting, but without relief from pain. There was "high fever." Castor oil was given on that second day, but was vomited at once. During all this time there had been no movement of the bowels. On the third day, some twelve hours before her entrance to the hospital,

[1] Boston Medical and Surgical Journal, vol. cxli, page 381.

castor oil was given her again. A large number of watery stools followed, but now for ten hours there had been no movement, and it was stated that during that time the abdominal pain had been growing worse steadily.

When I saw the girl she seemed to be in good general condition, flushed and frightened but without the peritoneal facies. Her sublingual temperature was 103° F.; pulse 112; respiration 28. Her abdomen was uniformly distended and tender; extremely tender in that particular region which has come to be known as "McBurney's point," and there her greatest pain was localized. On the right side, too, there was marked muscular rigidity and spasm. No special tenderness was to be made out by the rectum.

The case seemed so clear that I decided to operate at once; and I think any one of my colleagues would have done the same. No blood count was made at the time, but one was made immediately after the operation. The incision was made over the seat of greatest pain, and a distended but otherwise normal-looking cecum discovered, together with a long, normal retrocecal appendix vermiformis. The incision was enlarged and the abdomen carefully explored, but all the viscera were found to be perfectly sound, with the intestines somewhat distended, but healthy in appearance. To be sure a mass which seemed about half the size of a hen's egg had been felt within the cecum, but this was at first taken to be fecal.

After exploring the abdomen I returned to a further investigation of the apparently fecal mass. Careful palpation showed that it was not fecal. It felt like a coil of matted shoe-strings. But it might be a tumor growing entirely within the lumen of the gut. It did not seem freely movable. At any rate its removal was necessary to relieve the patient's symptoms. A two-inch longitudinal incision in the cecum allowed the foreign body to be squeezed out readily. It proved to be a compact mass of orange pulp. The cecum was closed, the abdominal wound sewed up and the patient put to bed. She was relieved of her symptoms, made a good recovery and went home at the end of four weeks.

Another interesting feature of this case was not developed until after the operation: the blood count at the time showed 30,200 whites. Had I received this report before operating, instead of immediately afterwards, I should have felt still more convinced that I was dealing with an acute intra-abdominal inflammation. Two days after the operation the count had come down to 10,500 whites.

Further comment on this case is almost needless, except to point out that the diarrhea following the giving of a dose of castor oil, so far from contraindicating appendicitis, went rather to confirm that diagnosis, when one coupled with those facts the continued and increasing pain and distention suggesting a perforated appendix and spreading peritonitis.

Reporting Cases of Lead Poisoning.— A coroner's inquiry has recently been held in the neigborhood of Manchester, England, relative to the supposed death from lead poisoning of a workman at a chloride electrical storage factory. It appears from a statement in the *British Medical Journal* that it is incumbent upon practitioners to report to the Home Office all cases of lead poisoning, as well as poisoning from arsenic and phosphorus.

Medical Progress.

RECENT PROGRESS IN SURGERY.

By H. L. Burrell, M.D., and H. W. Cushing, M.D., Boston.

(Concluded from No. 23, p. 577.)

THE RESULTS OF VON BRUNS'S SUBPERIOSTEAL AMPUTATION OF THE LEG.

Hahn, in an article on this subject,[18] states that in 1893 Professor von Bruns published an account of his method, which had been employed in 20 cases. He states that at present the total has risen to 81, a sufficient number to draw definite conclusions as to the value of the operation.

A desirable method of amputation of the leg should fulfil the following conditions: It should be easily performed, and the conditions attending wound healing should be of the simplest kind; it must do away with gangrene of the flaps, and, lastly, should give a perfectly shaped stump. The author states that all these requirements are fulfilled in von Bruns's operation.

The skin being well retracted by an assistant, a circular incision involving all the soft parts is carried down to the bone. Two vertical incisions are now made at right angles to the first for about four centimetres, one along the inner border of the tibia down to the bone, the other penetrates between the muscles down to the fibula. Through these incisions the soft parts, including the periosteum, are raised from the bones. The entire mass of soft parts being properly retracted, the bones are sawn through. There remains then anterior and posterior flaps of periosteum, muscles and skin. After ligation of the vessels and trimming of the tendons, the periosteal muscular portion is united over the bones with buried catgut sutures, the skin is united separately after somewhat rounding off the corners. Above the lower third, or where the condition of the soft parts demands it, the circular incision through the skin is made separately and at a somewhat lower level.

Of the 81 cases 63 were in the lower third, 12 in the middle. There were no deaths. Perfect union was obtained in 62, slight disturbances occurred in 11, suppuration and healing by granulation eight times, two requiring reamputation. In only three cases was there gangrene of the flaps — less than four per cent. Each of these cases was attended with conditions specially predisposing to gangrene. In 1882–1888 the amputations in the clinic were attended, according to the author, with a percentage of gangrene of 17. Some collections of statistics give as high as one-third of the cases as resulting in gangrene of the flaps. The after results as regards shape and usefulness of the stump were most satisfactory. In no instance was the scar adherent; equally good results attending the complicated and unfavorable as the good cases.

THE TECHNIQUE OF LARYNGECTOMY.

Keen,[19] in a paper on this subject read before the American Surgical Association, gives the history of a case of epithelial carcinoma on which a thyrotomy was done in May, 1898. In October of the same year it was found that total laryngectomy was necessary, and the author adopted a method which rendered

[18] Beiträge zur klinischen Chirurgie, Band xxii, Heft 2; Annals of Surgery, June, 1899, p. 781.

[19] Annals of Surgery, July, 1899, p. 1.

the operation one of simplicity, caused but little loss of blood and little shock, and avoided the danger of aspiration pneumonia. He states that his patient was out of bed on the fourth day, and was practically well on the tenth day, entire union by first intention having been secured. The details of the operation are as follows:

The patient was placed in the Trendelenburg position, and an incision was made in the median line, in the scar of the old thyrotomy. The thyroid cartilage was again split, and the two halves drawn apart to determine by inspection whether a total or unilateral laryngectomy was required. Having decided upon a total laryngectomy, the soft parts were dissected away from the entire larynx, keeping very close to the cartilages until the esophagus was reached posteriorly. All hemorrhage was carefully arrested by catgut ligatures. The median incision in the skin was carried down nearly to the sternum, but the soft parts were only separated down to the cartilages. A low tracheotomy was then done, but instead of any tampon canula a large ordinary tracheotomy tube was inserted, the calibre of the outer tube of which was twelve millimetres in diameter. The inner tube was removed and the metal tube of Hahn's canula was inserted and connected with its chloroform apparatus. Prior to this time chloroform had been administered by the mouth.

The trachea was now divided completely across below the level of the cricoid and below the inner border of the beard. The lower end of the portion to be removed was then drawn forward by a hook, and chiefly by the finger, but with the occasional assistance of the Allis dissector; the author very carefully separated the larynx from the esophagus up to the upper level of the larynx. By a few snips of the scissors the author was able to divide the attachments of the upper margin of the larynx horizontally and remove it. The epiglottis was drawn down through the median incision and removed. A few vessels were tied with catgut.

The upper edge of the anterior wall of the pharynx was then carefully attached to the tissues, just below the hyoid bone, by interrupted silk sutures, placed very close together. It was thus hoped to shut off entirely the secretion of the mouth and pharynx from the operation wound. The upper end of the trachea was now united to the skin by silk suture. The tracheotomy tube was then withdrawn and chloroform was administered on a pledget of cotton covered with a layer of gauze, held in a pair of ring forceps over the open end of the trachea. The tracheotomy wound was then immediately closed by catgut sutures to the trachea, and silkworm-gut sutures closed the corresponding wound in the skin. The wound above the tracheal opening, at the former site of the larynx, was also closed by silkworm-gut sutures, a small gauze drain being inserted in the lower end. The amount of blood lost during the operation was less than three ounces.

The wound was dressed as follows: Narrow folded strips of gauze were placed above and below the tracheal opening, which was left bare. To protect the wound from infection, if possible, and certainly from dust, the body of a disinfected wooden pill box, from which the top and bottom had been removed, was placed over the tracheal opening, and over the pill box two or three layers of gauze were laid and pinned to the dressing on each side, the object being to filter the air. From time to time the gauze and pill box were removed, so as to remove any discharge from the margin of the tracheal opening. The entire operation of tracheotomy and laryngectomy occupied an hour and a half.

The author considers that a further improvement can be made in the technique, namely, the omission of any — even a temporary — tracheotomy. He proposes in his next case, after dissecting the soft parts from the larynx and upper trachea back to the esophagus on both sides, to place the patient in the Trendelenburg position and deepen the narcosis to a slight extent; to then divide the trachea transversely, and by three sutures, one in the middle line and one on each side, to quickly attach the tracheal stump to the skin. He then proposes to introduce the ordinary tracheotomy tube into the open end of the trachea instead of through a tracheotomy wound and continue the anesthetic through the tube. The later steps of the operation will be the same as above described. In order not to embarrass the operator, the flange of the tracheotomy tube should only project at the sides, as the usual wide upper border of the flange would interfere with access to the parts in the beginning of the removal of the larynx.

THE RECONSTRUCTION OF A PERFECTLY FUNCTIONATING ANAL SPHINCTER FROM THE LEVATOR ANI AND GLUTEAL MUSCLES.

Lennander [20] has devised an original and successful operation for the restoration of the anal sphincter in a case in which it had been destroyed by a phlegmonous ulceration which originated in the ischiorectal spaces and left the patient without the power to retain either flatus or feces, even when astringents and opiates were employed. The opening into the rectus readily admitted three fingers, and electrical stimulation failed to reveal any contractility of the anal sphincter. Subsequent examination, after a successful operation had been performed, showed a local anesthesia in the area about the anus and in the mucous lining of the gut, which made it highly probable that the nerves had been destroyed as well as the muscle.

Finding no analogous or similar cases reported in literature, the author determined to construct a new sphincter, employing for this purpose the levator ani muscles, which have been shown to have the power of contraction in a manner similar to the anal sphincter. After careful dissections of the male perineum and a study of the possible operations he performed the following, with results that were all that could be desired, as the patient secured perfect control over both flatus and feces, even when the latter were liquid.

An incision followed the line of the sacrum and coccyx to the tip of the latter bone, and then took a horseshoe form about the rectum. The posterior portion of the levator ani and the anterior portion of the coccygeus were laid bare by dissecting back the glutei from their median origin. The levator ani muscles were freed from the coccyx and coccygeal muscles, although the separation was not made completely to the margin of the pelvis, as it would have interfered with the innervation of the muscles by dividing the nerves which are found there springing from the sacral plexus. These portions of the levator ani were car-

[20] Cent. f. Chir., June 24, 1899; American Journal of the Medical Sciences, August 1899, p. 219.

ried on either side of the rectum, and fixed to the anus in such a manner that their contraction produced a constriction of the rectum. The median portion of both glutei muscles were separated from the tuberosacral ligament, the sacral bone, and the coccyx, and used to fill the defect in the pelvic floor caused by the displacement of the levator ani muscles. They were united in the median line with each other, with the levator ani muscles, and with the skin of the anus. The after-treatment consisted in electrical stimulation and the use of small enemata to accustom the rectum to retain its contents.

INOPERABLE ANGIOSARCOMA CURED BY ELECTROLYSIS.

Videbech [21] reports a case of angiosarcoma occurring in a girl of sixteen years. It was the size of a child's head; was situated at the base of the neck posteriorly, and had rapidly increased in size during the last two months. The attempt was made to remove it, as it was not adherent to the skin and had considerable freedom of motion. The operation, however, showed that it had invaded the deeper structures and had passed anteriorly between the lateral spines of the vertebræ, where it was impossible to reach. After as much as was possible had been removed, the wound was cauterized with chloride of zinc and an antiseptic dressing applied. The microscopical examination of the tumor showed it to be an angiosarcoma. On the removal of the dressing on the fifth day there was considerable hemorrhage. The wound was packed with iodoform gauze, and the next day electrolysis was commenced. Four needles were passed from the positive and negative poles as deeply into the remaining tumor as was deemed safe, in different directions, and a current of 500 milliampères was passed. This was followed by a copious discharge of necrotic tissue sometimes as large as an egg. The wound finally cleared up and granulated over.

About a month later the granulations assumed an unhealthy appearance and a microscopical examination showed sarcomatous cells. The electrolysis was, therefore, repeated on four successive days. The current was several hundred milliampères, and the chemical action about the needles was marked. The wound healed rapidly after this by granulation, and the patient was shortly dismissed, about six weeks after the original operation.

The patient was under observation for over three years, and no recurrence had been noted.

A careful review of the literature of the subject shows that no results similar to this have been obtained where the nature of the tumor has been determined by microscopical examination, and an operation has demonstrated the impossibility of removing it in its entirety.

The author agrees with Kaarsberg that the rational method of operating by electrolysis consists (1) in using it as an adjunct to the knife where that cannot be employed; (2) in the employment of strong currents of electricity, which produce a decided, quick and thorough destruction of the diseased tissues. To make this possible the tissues must be freely accessible, so that one can see where to work and avoid injuring vital parts, and also to provide an outlet for the devitalized tissues.

[21] Cent. f. Chir., 1898, No. 31; American Journal of the Medical Sciences, July, 1899, p. 104.

Powerful currents are not as dangerous as has been supposed. The needles should be thrust deeply in at various points, and should be employed at various poles.

THE ACTION OF THE HOLLOW-TIP BULLET.

Bruns [22] conducted an extensive series of experiments with this new bullet and his findings may be summarized as follows:

The wounding faculty of a missile fired by a given weapon and a given powder can only be increased by rendering it more easily deformed. Consequently, the extent of the wound inflicted is proportionate to the projectile's alteration in shape. In the modern rifle the entire covering of the leaden core of the bullet is made sufficiently resisting as to be only affected on striking a bone and only when fired at a comparatively short range. To the use of jacketed bullets must be given the credit of the occurrence of less gruesome wounds attending the employment of the small-bore weapon.

In attempting to increase the efficacy of the ordinary modern bullet, the tendency was naturally towards removal of the tip of the mantle, resulting in the so-called "Dum-Dum." These were used in the last Indian uprisings by the British, and at short range the wounds inflicted were frightful. Even simple wounds of the soft parts are extremely severe, as the tremendous initial velocity quickly results in the "mushrooming" of the soft lead. To the softness of the lead tip is due its lack of penetration, which at short range is four or five times less than the "full mantle" bullet. They are also far inferior in ballistic quality.

In penetration the hollow-tipped bullet compares favorably with the ordinary type so long as no alteration in its shape is produced, and the greater the resistence of the target the more unfavorable the comparison. The following examples are instructive: Distance, 25 metres, dry deal block, "full mantle," no change, 100–110 centimetres penetration; hollow tip, slightly altered, 84 centimetres penetration; lead tip, markedly altered, 20 centimetres penetration. Same distance, dry beechwood, "full mantle," no change, 54 centimetres penetration; hollow tip, markedly altered, 14 centimetres penetration; lead tip, markedly altered, 12 centimetres penetration.

The gain in lateral effect must therefore constantly be obtained at the expense of penetrating power. The hollow-tipped bullet inflicts nasty wounds at short range, but is incapable of passing through four or five opponents or heavy covering. While such missiles may be of value in dealing with savage opponents, their usefulness in European warfare is questioned by the writer. If in the latter event an engagement were opened at 1,000–1,500 metres, a decisive result would occur as soon as the range was reduced to 500 metres; and even at this last distance the specific action of the hollow-tipped bullet has been proven experimentally to be wanting.

He may reasonably anticipate that, following the lines of the English improvements, there will be a renewal of efforts at increase of wounding capacity of bullets, and by following up this principle, efforts will doubtless be made to check the otherwise certain tendency to a further reduction of calibre. The evolution of the modern firearm is still active.

[22] Annals of Surgery, May, 1899, p. 651.

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

JULIAN A. MEAD, M.D., SECRETARY.

THE Society met October 4, 1899, at 19 Boylston Place, Boston. After the transaction of routine business, DR. JAY PERKINS, of Providence, read a paper on

INSANITY AS AN EXCUSE FOR CRIME.[1]

DR. HOUGH: There is one point in the paper that I would like to bring up, and perhaps the reader can give us the information I seek. I refer to the propriety of the medical examiner acting as assistant district attorney, suggesting questions to be asked witnesses. For my part, I should like to know what the custom is in different parts of the State.

In Bristol County the district attorney has always considered that it was one of the duties of the medical examiner to give to the district attorney every assistance possible in every way in the preparation of a case, as well as in the actual conducting of the trial, and he is expected to sit near the district attorney and suggest to him questions to be asked on the cross-examination of medical witnesses for the defence, and also questions pertaining to medical matters of his own medical witnesses. Whether this is done elsewhere or not, I should like to know, and I hope that our associate members may enlighten us.

HERBERT PARKER, ESQ.: Of course, I can only speak of my own personal experience and my own judgment in the matter, as to what may be the duty of the medical examiner, both before the inquiry in court, and during preliminary examinations. It is quite true that all district attorneys look upon medical examiners as officers to whom they can always go for assistance in investigations and preparation of a case which seems to involve medical questions in connection with a crime. My own view of the situation is this, and I have always followed it. I do not have a medical examiner with me for the purpose of prompting or suggesting questions, or appearing in any way to participate in the conducting of the trial. The medical examiner has, of course, his own duties. He makes an examination at the autopsy, and draws an inference as to the cause of death, without at the time intending to form any prejudgment as to who may or may not be connected with the death, if it should turn out to be a crime. The medical examiner, so far as possible, should stand before the court impartial because of the duty that he has taken. I agree entirely with the gentleman who has just spoken. Difficulties have grown out of expert testimony, and the reason why that testimony has been condemned in the popular mind is because the expert (which has happened in a vast majority of cases) after artful examination will stand revealed as a partisan, and the moment he has been so disclosed, I can tell you that he has become valueless. My own practice is to confer immediately with the medical examiner, after the autopsy, concerning the condition. I do not need to charge them, as they are quite as intelligent as I. They all know that if the case comes to trial their duty is to tell exactly what they saw and found, and abstain from drawing inferences, except the inferences that are to be drawn from pathological conditions. The moment a medical examiner becomes of the belief that a person is guilty of the crime, his duty is one very dangerous to the subsequent value of the case. Of course, there is a conference with the medical examiner outside of court, and we must be diligently instructed when we try to deal with some matter within your province. Let me say here, and have it understood, that I am not at present a district attorney, but an ex-district attorney. I have always looked upon my medical examiners, in all questioning, as of the utmost value; we cannot conduct any criminal inquiries without them, but they should not participate in the prosecution. This same condition should be carried out in the trying of cases where physicians are employed by corporations in the case of an accident for the consequences of which the corporation may be held to answer. The physician goes and makes an examination, not so that he may be useful in the trial, but, as an impartial man, expresses his opinion as to the physical condition at the time of the examination, and should absolutely abstain from trying to gather from the patient when he visits him what were the circumstances of the accident, because it is always charged that the physician goes to the patient not wholly as a physician bringing the assistance of his science, but as a detective trying to make diligent inquiries to get some important statement that may be brought against that person and may be brought out in the court.

DR. PINKHAM: I should like to ask a question in regard to dying declarations. Is it necessary for a person to believe absolutely that he is going to die, before his declaration can be taken, or if he thinks that he is very likely to die, is that sufficient? That is the question. You take the criminal abortionist: there is a question about the propriety of the physician's telling the patient that she must die; he cannot be sure of it until, perhaps, she is unable then to make an intelligent statement. We save these cases up to the very last, when they seem to be in extreme conditions, but owing to surgical treatment may get well; can the physician tell such a patient that she will die and discourage her, perhaps add to the probability of her dying? If the physician must make that statement and the patient must believe absolutely that she is going to die, I think it would be difficult to get dying declarations that would be admitted to the court; it would be very rare. This is the question that I want to raise, whether in this declaration, in view of the extreme condition, probability of death would be sufficient.

HERBERT PARKER, ESQ.: The dying declaration must be made by the deponent under the condition of mind which is removed from all hope of recovery; it must be made in anticipation of death. The theory upon which it is admitted at all as evidence, so contrary to the rules of evidence, is that the solemnity of the occasion, deepened by the belief that they are about to die and go before their Maker, and dare not die with a falsehood on their lips, has established this evidence as competent, and that the deponent at the time of making this declaration had no hope of recovery, but made it in anticipation of death. What the gentleman has said in regard to the difficulties attending are well appreciated by courts and prosecuting officers. They know that it would be the gravest question, and that the physician would hesitate in saying something

[1] See page 595 of the Journal.

that might make the recovery of the patient doubtful. There have been quite a number of cases, where I have known the attending physician to watch the patient, prepared to take the declaration when it becomes necessary, and to wait until he is sure that no human aid will save the life. Where the priest is necessary, the patient is told the condition, and so we get this condition, that many declarations used in evidence will be lost for reason of the moral responsibility of the physician. The evidence is valueless, unless given in anticipation of death, the patient having no hope of recovery.

Dr. Charles Harrington read a paper on

FOOD POISONING AND METALLIC IRRITANTS.[1]

Dr. Hough: I think that the question here is a question of diagnosis during life, as well as the appearances after death. I fear that I have not grasped some of the points in Dr. Harrington's paper, wherein he makes out in three points for diagnosis the difference between arsenical and ptomaine poisoning. In the first place, in food poisoning the actual paralysis of the throat, so that swallowing was impossible, and the patient could not speak; second, in food poisoning there was usually dilatation of the pupil, sometimes absent, and rarely detected; third, you could make a person poisoned by arsenic get up and walk, but in food poisoning you could not. As physicians, we could hardly make use of the last-mentioned sign or diagnosis, so it appears that we are limited to the dilatation of the pupil, and the paralysis of the throat. We must acknowledge that in some cases, if not many, that diagnosis during life is impossible, and we have only the chemical examination.

Professor Harrington: I did not mean to imply that there are no cases which it is absolutely impossible to diagnose without these signs; I have, however, taken some which are very common in food poisoning, and not observed in arsenic poisoning. I certainly should not advocate taking a man out of bed to make him walk; the man absolutely cannot walk in food poisoning, but simply slumps to the ground. As to dilatation, that is another point which is not invariably present, not very commonly. I do not think that it is commonly present in poisoning by arsenic. While there is likely to be great difficulty in swallowing before death, caused by arsenic poisoning, that difficulty is owing to emotion of pain, while in food poisoning there is an involvement of the cells and throat, and swallowing is impossible, not on account of pain, but the inability to swallow. There are one or two other points that I have mentioned on which I have laid no special emphasis, as to the character of the stool, very offensive odor in food poisoning, which in arsenical poisoning is not so. There are a great many cases recorded, where, from the symptoms as given, it is impossible to determine whether food or arsenic poisoning was the cause of death. Oftentimes where arsenical poisoning has been suspected, a chemical analysis made afterward found no arsenic, but ptomaine poisoning had been demonstrated.

Dr. Hartwell: I was particularly interested with what Professor Harrington said in reference to paralysis of the throat as a point in food poisoning. At a hotel in London, some 70 people were prostrated, and one, Professor Webber, died within forty-eight hours. In all of the cases the papers stated that the prostration was caused from ptomaine poisoning, and many would not be able to live, and our English cousins claimed the sickness was caused by certain products that came over from America, as those prostrated had eaten something that had come in cans, apricots or peaches. The case comes up in October, and there is wide attention given it in the city of London, on account of the standing of the hotel.

[1] See page 601 of the Journal.

Recent Literature.

Sexual Impotence. By Victor Vecki, M.D. From the author's second German edition, revised and rewritten. Philadelphia: W. B. Saunders. 1899.

In his preface to the above volume, the author has expressed himself thus, in part: "When the first German edition was published in 1889, there was some commotion in the ranks of old and young medical fogies, who were indignant that any one dared to resist their intellectual tendencies, refused to worship their superannuated gods. The second German edition found the ranks of the same kind of professional formula-riders and bigots solid though somewhat thinned. I have taken the liberty of preserving the independence of my altruistic opinions, and shall continue to fight against false and hypocritical quasi-scientific pretensions," etc.

The above quotation suggests that the author has with difficulty escaped the perhaps congenial role of a martyr at the hands of a part of his professional *confrères*, and has adopted the rather aggressive attitude which his words indicate instead. At any rate there is no room left by them for doubt as to his unalterable determination to nail his colors to the mast and to perish nobly in defence of the beliefs which he seems persuaded are wholly personal and to call for full preparations for *combat à l'outrance*. In view of this suggestion we are a little surprised at not finding anything either so radically new or startling upon reading his excellent work as to explain the need he feels for writing such a preface, or that could have called down upon him such condemnation as that with which he has evidently been visited.

There is not much to be said by way of adverse criticism, and something certainly to be spoken in its favor. It is a thorough presentation of a subject which, as the writer says, has received too little attention, though we cannot agree with him in considering it to be one that has been so profoundly neglected as he seems to consider.

The subject is introduced by one chapter on the anatomy and one on the physiology of the organs concerned, both of which are good. In the course of the latter the formation of the spermatic fluid is dealt with at considerable length, and the theory of reabsorption of spermatozoids is also combated. Examples are adduced to show that daily coition does not necessarily make the spermatazoa wholly disappear from the seminal fluid.

The various forms and etiological factors of impotence are considered in detail in the following chapters, and the book concludes with a description of the various methods of treatment, including that of suspension by means of an apparatus similar to that used for applying plaster-of-Paris jacket to which some degree

of benefit may be ascribed in a certain number of cases. These last chapters contain a number of useful suggestions, amongst which is to be noted the emphasis which the author places upon psychical treatment, the employment and effects of massage, gymnastics, electricity and bathing.

The practitioner is generally not familiar with the remedial measures for this condition and can gain a good practical knowledge of them from this work.

On Fractures and Dislocations. By PROF. DR. H. HEFFERICH, of Grieswald. Translated from the third edition by J. HUTCHINSON, JR., M.D., F.R.C.S., Surgeon to the London Hospital. New York: William Wood and Co. 1899.

This volume is one of the series of medical hand-atlases published by William Wood and Co. It varies somewhat in its size, arrangement and illustrations from a former edition published in 1896. The descriptive text, which treats of the subject of fractures in general and specifically, occupies the first one hundred and thirty pages, and is illustrated by one hundred and twenty-six wood cuts of pathological conditions, methods of treatment and apparatus. The remainder of the book is a collection of sixty-eight chromo-lithographic plates, each of which is accompanied, on the page facing it, by a brief anatomical description of the lesion shown. Although there is no preface, or introductory note, it is to be presumed that the plates have the same origin as those of the former edition, which were from original drawings of actual specimens, many of which were especially prepared for the purpose. The remainder were drawn from museum specimens or lesions artificially produced. They represent recent injuries, fractures after union, and in some instances methods of treatment. The present volume is slightly larger than the 1896 edition. It is an attractive book of convenient size and contains much valuable information in a form exceedingly available for rapid reference.

The Mineral Waters of the United States and Their Therapeutic Uses. With an Account of the Various Mineral Spring Localities, Means of Access, etc. By JAMES K. CROOK, A.M., M.D., Adjunct Professor of Clinical Medicine and Physical Diagnosis at the New York Post-Graduate Medical School, etc. Pp. 580. Philadelphia and New York: Lea Brothers & Co. 1899.

This is a useful book, because it fills a gap in our American medical literature, and, again, because by it additional attention will be directed to measures of treatment too little used in the United States, but of undoubted value. The author wins our confidence by the judicial and impartial tone of his writing on a topic which offers so many pitfalls. It is precisely for this reason that we can recommend the volume and give the writer our thanks for a reliable, comprehensive and conscientious work.

The first part is devoted to a discussion of mineral waters and their therapeutic uses. The origin, classifications and constituents of mineral springs are dealt with in the first few chapters, while the remaining chapters take up general conditions relating to the use of hydro- and balneo-therapeutics in special diseases. Each disease is treated cursorily (the scope of the book makes this unnecessary) and little more is said than to call our attention to the many possibilities of water treatments and the various means in which they may be employed.

The second part contains a description of the mineral springs and wells of the United States, with the topographical and climatic features of each State and Territory. This comprises some five hundred pages, or five-sixths of the whole book. As two hundred more mineral spring localities are described in this volume than in any other treatise of this nature, the extent of the author's researches becomes manifest. This completeness makes the book of great value for reference and ensures its purchase by every medical library.

It is unfortunate that the writer fails to use the metric system. The book is, as a whole, so excellent, that in this special regard, too, it should be an example. There are few typographical errors. On page 106 the consumption mortality of California is stated to be "2.39 per 100" when "per 1,000" is undoubtedly meant.

Few books contain less superfluous matter, while at the same time presenting all needful information.

An Experimental Research into Surgical Shock. By GEORGE W. CRILE, A.M., M.D., Ph.D., Professor of Surgery and Applied Anatomy in the Cleveland College of Physicians and Surgeons, etc., Philadelphia: J. B. Lippincott Co. 1899.

This book is the published form of an essay for which the Cartwright Prize for 1897 was awarded. It is a very readable work of one hundred and fifty-five pages, and represents a great deal of thought, literary work and experimentation on the part of the author. It is not common to find accounts of experimental research into surgical shock, and the book is more interesting and valuable on that account. The effect of irritation and injury in producing shock has been recorded from actual laboratory tests made on the various organs and tissues of the body. The detailed account of this laboratory work occupies the greater part of the book. The data thus obtained are classified and summarized. The concluding chapters are devoted to the "prevention" and "treatment" of shock; the author's conclusions; and the "factors producing collapse." The introductory review, entitled An Historical Account as to Theories concerning Shock, is an excellent *résumé* of the literature of shock. The book is one of the most thorough and carefully written essays devoted to this subject, the importance of which is apparent to every one, and especially to the surgeon. It deserves to be carefully studied.

Notes on Surgery of Nurses. By JOSEPH BELL, M.D., F.R.C.S., (Edin.), Consulting Surgeon to the Royal Infirmary, etc. Fifth edition. Pp. 189. Edinburgh: Oliver & Boyd. 1899.

The book contains the chief points of the author's course of lectures which for twelve years he has given the nurses of the Royal Infirmary in Edinburgh. It is intended to aid the nurse to understand and perform intelligently her clinical work in the hospital wards. The book contains many valuable hints to nurses, but is written somewhat in the style of the general lecture to hospital nurses or young ladies' sewing-circles. There are numerous glittering generalities and possibly more detail of pathology than would seem necessary for routine nursing. As one reads the chapters on suppuration, ulceration, gangrene, tumors, etc., the suspicion is aroused that perhaps it would be of more value to the nurse and her patient if she properly knew how to cook his food or prepare his bed than to know that there are six de-

grees of severity of burns, or that for skin-grafting the skin of young animals, such as kittens, terrier puppies and white rats, often can be used with success. But, as the writer states in his preface, the book is only intended to aid nurses who take an interest in their duties to understand their cases; perhaps for this purpose it will fulfil its mission.

On Varix, its Causes and Treatment, with Especial Reference to Thrombosis. By William H. Bennet, F.R.C.S. (Eng.), Surgeon to St. George's Hospital, etc. Pp. 53. Illustrated. London, New York and Bombay: Longmans, Green & Co. 1898.

Under the above title is published an address which was delivered by the author at the inaugural meeting of the Nottingham Medico-Chirurgical Society in 1898, and which, with the exception of a few slight alterations and the addition of twelve illustrations, appeared in the *Lancet* of October 15, 1898. It is an interesting monograph. The writer has devoted considerable time to this subject, especially the etiology of the affection, and has been impressed with the apparent importance and frequency of thrombosis as an active cause of this lesion. His remarks on the danger of varices when in the thigh attract attention; also the chapter on palliative treatment. The book is a valuable contribution to the literature of the subject and is well worth reading. It will be an aid to the diagnosis of some obscure cases which probably many a surgeon will recall while reading its pages.

Handy Book of Medical Progress. A Lexicon of the Recent Advances in Medical Science. By Charles Warrenne Allen, M.D., Consulting Dermatologist to the Randall's Island Hospitals, etc., and Jacob Sobel, A.B., M.D. Pp. 185. New York: William Wood & Co. 1899.

This small volume, as its name implies, aims to put before the reader in concise form the gist of recent advances in the various branches of medicine. Its limited size naturally does not permit of completeness, but it nevertheless contains much useful and important information. Mention is made, for example, of many of the newer drugs and preparations, with brief descriptions of their composition. A timely paragraph is devoted to liquid air. On the other hand, many matters by no means new find a place, as for example, Little's disease, polyuria, Graefe's sign, Addison's disease. In a somewhat limited way, the book will no doubt be found useful by those who do not have ready access to larger medical dictionaries. The binding and printing are satisfactory. The various subjects mentioned are arranged alphabetically, which precludes the necessity of an index.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, M.D., Clinic Professor of Laryngology in the University and Bellevue Hospital Medical College, New York, etc. New York and Philadelphia: Lea Brothers & Co. 1899.

This text-book is carefully written: the arrangement and the relative amount of space given to each subject are in most cases good. The anatomy and physiology of the region under consideration are well condensed into a very small space. Many chapters, such as that on methods of examination, vasomotor rhinitis, perforation of the septum, epistaxis, diphtheria, tuberculosis of the larynx, and several others, are clear, concise and well adapted for use in following a didactic or clinical course on the subject, or as a reminder to general practitioners. The diseases of the nose begin with a chapter on nasal obstruction, an attempt to generalize a large amount of the pathology and symptoms to be described later. This would be more likely to confuse than to help the cursory student, for whom the book is especially adapted. The same might be said of classifying purulent and membranous rhinitis as separate diseases rather than as symptoms in their proper places. The space given to some important subjects is not sufficient; in other words, the book is too much condensed. For instance, the subject of diseases of the ethmoid cells is contained in two pages. The author confesses to lack of space for description of operations for redressing deformities of the septum, and describes only that of Asch. To a student it would probably have seemed a better balance to have given more space to this subject, perhaps at the expense of some of the thirty pages on diphtheria, which is commonly classed under general medicine. The description of tonsillotomy does not cover that large class of hypertrophied tonsils which are so adherent that a guillotine can shave off only a small slice.

The illustrations are not satisfactory. Most of them are instruments, and some of these are not the ones which many men would choose. An illustration of a lingual tonsil and one of a peritonsillar abscess ought not to be allowed anywhere. A few from Zuckerkandl are well chosen.

No one could write a short text-book, in which didactic assertions are necessary for clearness and brevity, without laying himself open to criticisms of details from those working in similar ground. The author's choice of methods and instruments, and especially therapeutics, is, of course, not always the same as would be chosen by his colleagues, but in general his teaching may be considered orthodox. As a text-book for a short course on laryngology the book is good, it probably contains enough for a book of reference for a general practitioner who wants help in an occasional case, but for either class it would be better to use a less superficial work.

Claude Bernard. By Michael Foster, M.A., M.D., D.C.L., etc., Secretary of the Royal Society of London; Professor of Physiology in the University of Cambridge. New York: Longmans, Green & Co. 1899.

The appearance of this little book, written by Sir Michael Foster, will be welcomed by all who are interested in experimental medicine. The book gives us a clear account of the scientific work of the great physiologist — one of the pioneers in the enormous field of physiological research — and so furnishes us with a valuable addition to the library of physiological history, besides pointing out the immortal discoveries made by Bernard.

It is to be regretted, perhaps, that the book does not contain more information of Bernard's life apart from his scientific work, but, as Sir Michael says in his preface, the details which can now be gained of Bernard's life are very scanty. So, perforce, we must be satisfied with the meagre details of his ordinary life contained in the volume, and which are, indeed, sad and commonplace enough. We simply read that a great man, one of the keenest observers the

world has ever seen, and holding an eminent scientific position, was unfortunate in his domestic happiness. A lack of appreciation of his scientific attainments, and even more, disapproval of his work, by his family, led to a complete estrangement. However, this is redeemed by the fact that he was adored by his pupils, who loved and admired him not only for his quick intellect and broadness of mind, but also for his charming manner and moral worth.

Throughout the book Sir Michael points out the value of Bernard's different experiments and introduces criticisms and opinions of his own on the science of physiology. The value of the book is greatly enhanced by these opinions of Sir Michael — shorn of them the book would deal simply with Bernard's scientific life and would then be merely a simple calendar of scientific discoveries. Attention should be called to the paragraphs on pages 131-134, which beautifully sum up the value of vivisection.

Chapter IX (conclusion) is capital. It discusses experimental investigation, in which Bernard excelled, in a clean-cut, forcible and charming manner; it can be read with profit by any one, old or young, interested in scientific research. The following paragraph (page 230) is an excellent sample of some of the sound philosophy contained in this chapter; many so-called scientists would do well to ponder over it, the longer the better.

"An hypothesis may be good or may be bad, may be fruitful or may be barren. This may, on the one hand, depend on the very nature of the hypothesis, which may, even at the outset, in its very origin, be worthless and wrong. On the other hand, failure or success may depend on the framing of the experiment by which the hypothesis is tested. Here, too, the imagination comes into play. The man who constructs an hypothesis without supplying an adequate programme for its trial by experiment is a burden to science and to the world; and he who puts forward hypotheses which by their very nature cannot be so tried is worse, for he is a purveyor of rubbish."

The book contains an interesting frontispiece — a photogravure of Claude Bernard. The letter-press is clear, the paper and binding satisfactory. The book is full of information regarding the physiologists of Bernard's time; it is good all through and no one reading it will ever regret doing so.

Practical Diagnosis. The Use of Symptoms in the Diagnosis of Disease. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourth edition, enlarged and thoroughly revised. Pp. 623, with 205 engravings and 14 full-page colored plates. Philadelphia and New York: Lea Brothers & Co. 1899.

A fourth edition of a book within three years certainly attests its popularity. Few changes have been made in the text of this edition. Dr. Hare has succeeded in producing an eminently practical treatise, in which are to be found, with small expenditure of time, the essential morbid symptoms as manifested by the various organs of the body. Both the plan and execution of the book are admirable. It is of interest to note how prominent a place the nervous system fills in a consideration of disease from the standpoint of symptoms. The type and illustrations are excellent and reflect much credit on the publishers.

THE BOSTON

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MEDICAL MEN IN THE ENGLISH AND AMERICAN ARMY.

THERE is a certain interest attaching to the fact that the medical corps of the English army is being exposed to the same sort of criticism that befell our Medical Department during the recent war with Spain. It is claimed that the medical service is undermanned and that the best men seek other fields than the army for the prosecution of their professional work. No doubt both of these facts are true. What suffices for a peace footing is absolutely inadequate for the exigencies of an active campaign, and a certain confusion and inefficiency inevitably results. The reason for this has been clearly and forcibly presented in a recent paper by Colonel Dallas Bache, United States Army, to which we have already in another connection had occasion to refer editorially. Colonel Bache points out the relatively small need of a large force of medical men during peace, and shows how absolutely the situation is changed the moment large camps are formed, with the sanitary problems which such camps entail, not to speak of the treatment of those wounded in action: Apropos of the death on the field of a British medical officer, the *Medical Press* makes the following somewhat feeling comments:

"This sad incident again forcibly recalls the risks run by our non-combatant *confrères* in the discharge of their duties and it emphasizes the little-mindedness of those who make a point of taunting the officers of the Army Medical Corps with the fact that they do not belong to the combatant branch of the service. It was the Duke of Cambridge who described Sir George Robertson, the defender of Chitral, as "a brave civilian." A great deal of notice was taken of this sneer at the time, and it is never likely to be forgotten. Such repeated exhibitions of official bad taste and jealousy are answerable for the medically undermanned condition of the army at the present time. It was pointed out last week that the medical service of the army is in need of nearly 500 officers in order to place it upon a proper footing as to efficiency. If

this be the real state of affairs, it is an astounding revelation of what the trifling with the Medical Department by the War Office has led to. There is nothing which can compel young medical men to join the army, and until the War Office make up their minds to treat the Department properly, the army will have to do without medical officers."

We are glad to say that no such extreme state of affairs exists in this country. There has, of late, been much just complaint, it is true, of the lack of authority given medical men and their comparatively subordinate military rank, but, so far as we are aware, there has not been, nor is there likely to be, any sneering at the Medical Department on the part of the military branch of the service. At the same time the fact certainly remains, that medical men in the army are not accorded privileges and respect worthy of their professional attainments, and are regarded rather in the light of outsiders than as an integral and necessary part of the military organization. The inevitable consequence of this has been what we are now seeing, according to the English medical press, in England, and what we have been and are still going through in this country. An insufficient number of men enter the medical service of the army, and those who do enter it are, on the whole, not among the best of the younger men of the profession. It is clear that a medical man who has a proper conception of the dignity of his calling is not willing to belittle his profession and himself by taking an unduly subordinate rank, with small hope of adequate promotion. Out of the whole situation has grown the system of contract surgeons, which, in the opinion of those in a position to judge, is doing much to bring down to a still lower level the position of the Medical Department. That the conditions in the English army are very similar to those in our own is evident from the unprejudiced press comments to which we have already referred. It is clear that the medical problems of the future in connection with armies in camp or action are of a very different sort from those existing twenty-five years ago. We absolutely require men of the highest degree of scientific training; we need sanitarians, bacteriologists and physicians in the broad sense as much or more than surgeons, who have up to this time, and rightly, usurped the entire field.

The conditions have changed, and with these changed conditions, the attitude toward the Medical Department must also change, if the improvements for which we look are to be attained. In this connection we would call the attention of our readers to a letter in our last issue from Dr. Edward L. Munson, United States Army, in which, after strongly criticizing the present system of contract surgeons, he concludes as follows:

"The remedy for the above conditions is simple, and is in the power of the medical profession of the country to administer during the next Congressional session. All medical men serving with troops should be commissioned officers having a permanent status and possessing equal prerogatives with officers of other departments. They should be sufficient in numbers to properly cope with any emergency. In the few instances where outside and temporary appointments may be necessary, such action should be taken only after the attainment of the standard required in the regular service and the appointees should be commissioned as officers of volunteers. They should be in a position to demand as rights what too many line officers are prone to regard as concessions. They should all possess the power of command, a power the proper exercise of which has been demonstrated by General Wood and others to depend upon the man rather than upon the calling which he has chosen in life. In conclusion, it behooves the medical profession at large to protect the rights of its representatives in the military service, and that the necessity is actual rather than theoretical is shown by the fact that at the present time there are only 187 regular medical officers and over 400 contract surgeons serving under the colors."

Our technical knowledge is insufficient to give weight to anything we might say about ways and means of instituting reforms, but of one thing we are absolutely sure, and that is, that as members of a learned profession, we should not rest satisfied until a place of complete dignity has been gained for the physician, whether in military or civil life.

THE PUBLIC HEALTH AND COMMERCE: LEGITIMATE AND ILLEGITIMATE QUARANTINE.

The action of the Board of Health of New York in refusing to permit a cargo of coffee to be landed in that city, after it had been treated and certified as safe by the health officer of the port, and this action approved by the head of the Sanitary Bureau of the Federal Government, raises a most serious question with merchants as to what rights and protection they have at the hands of our Government in the pursuit of legitimate commerce.

The spectacle is that of a board of health supposed to be dealing with a purely sanitary subject from a purely scientific standpoint, whose untrained members outnumber, outvote, and effectually discount the experienced and scientific members, whose training and experience have fitted them for the treatment of such questions.

Is it politics between State and city, or the arrogant assertion of superior physical force? Of what further use are professional members on such a board? Of what further use can the Federal Government be in assuming to direct or advise in matters pertaining to the public health in the face of the present action of the New York Board of Health?

The local Board of Health has the authority to prohibit the docking of vessels and the landing of cargoes in the city of New York. The entry of a vessel has been made at the New York Custom House, and

neither the Federal officials at New York nor at Washington can permit such vessel or cargo to clear for any other American port. The vessel lies in the harbor at an expense, to owners of the cargo, of $250 per day, and the cargo is refused a landing.

The Boston Board of Health, having control of its port quarantine, has been asked what it could do with such vessels and cargoes as are now denied entrance in New York, and it has replied that it would discharge the cargoes at quarantine, disinfect cargo and vessel there, just as if conscious that either or both were infected, and immediately permit the docking of vessel and landing of cargo.

It strikes us that it is only fair to trust the officers in charge of the New York and Boston quarantines, they having all necessary facilities and experience for such work, as being capable of disinfecting such cargoes for the absolute safety of the public health. If this can be done, and we have no doubt that it can, the business interests of the country would seem to demand that it should be done without unnecessary delay. There are said to be at least ten more cargoes of coffee on the way to New York from Santos.

ANNUAL REPORT OF THE MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.

THE forty-second report of this admirable institution shows continued progress in the work to which it is devoted. The average number of inmates during the past year has been 605, with a cost of but $3.22 a week for each individual.

The event of greatest importance to the institution during the year has been the acquisition of a large tract of land, 1,660 acres in all, in Templeton, Mass., for the uses of the school. This has been necessitated in great measure by the constantly increasing demands made upon the school in Waltham, and also by the desire on the part of the superintendent and trustees to provide employment for the able-bodied inmates who have reached adult life, but whose mental state does not permit them to care for themselves. It is, in other words, the colony system applied to this defective class, as has been so successfully done with epileptics. The land selected for the purpose in and near Templeton is of the roughest description, but nevertheless with many natural advantages in the way of woods and hills. It is proposed to transfer the larger boys and adults whose ability fits them for the somewhat rough life, as soon as possible, in order that the reclaiming of the land, and the establishment of a working colony may be as little as possible delayed. It is hoped that the transfer of one hundred able-bodied males may be made in the spring of 1900, and that the work of cultivating the land may forthwith begin. The plan, which appears eminently feasible, is outlined by Dr. Fernald, the superintendent of the institution, as follows:

"The large extent of the estate seems to make it necessary that the first two colonies should be located some distance apart, in order that the boys may live near the barns, fields, pastures and wood-lots where they will be employed. With no elaborate buildings to care for, they can at once begin to produce milk, butter, eggs, potatoes, apples, beans, etc. The parent school at Waltham will provide a market for all the surplus farm products. In the winter they will be kept busy with the care of the stock and the cutting of firewood for cooking and heating purposes. In addition to the farm work, the boys can begin the preparations for the building for the next colony, the site of which would be determined by the location and character of the work to be done by the boys who are to occupy that building. As numbers increase and as other areas of land are cleared and developed, other farm colonies would be organized. In time certain work would be specialized, and a group of boys would live near the central laundry building, where they would be employed; another near the shops for carpenter, blacksmith and other mechanical work; another near the poultry farm, etc. The plan for providing for this class does not contemplate the organization of a conventional institution, but the gradual development of an agricultural and industrial community, our people living in simple, inexpensive dwellings, similar to those in other farming communities. This community will eventually have an amusement hall, a saw mill, a grist mill, a tailor shop, a paint shop, etc., every sort of employment and every sort of recreation, everything, in short, that goes to make up the life in a typical country village. The class of cases now and hereafter to be transferred to Templeton should include only those who have received a thorough course of school training and discipline and manual and industrial training at the school department at Waltham. Untrained and undisciplined, they would not do well under the conditions we expect to establish. Each year a certain number of adults would be promoted from the school department to citizenship in this community."

We shall watch with much interest the development of this plan, which certainly offers at least a partial solution of the difficult question of the disposal of this class of deficient persons, whose lives outside an institution are worthless to themselves and a constant source of anxiety to their friends. If we can make the feeble-minded in a measure self-supporting and proportionately self-respecting members of their own community, we are certainly doing a service of the highest importance, and this service it seems assured Dr. Fernald is about to accomplish.

MEDICAL NOTES.

SMALL-POX IN QUEBEC. — A mild type of small-pox is reported to be epidemic in Kamarouska County, Quebec.

OSTEOPATHS AND CHRISTIAN SCIENTISTS IN WEST VIRGINIA. — The courts in West Virginia have been appealed to for a decision whether osteopaths and

Christian Scientists are practitioners of medicine and whether, if such, they should not be subject to the State law requiring every practitioner of medicine to take examinations before the State Board.

A SOCIETY OF BACTERIOLOGISTS. — It is proposed to organize a society of American bacteriologists to meet during the Christmas holidays, in affiliation with the American Society of Naturalists.

LEPERS IN GUAM. — It has been suggested by Lieutenant-Commander Coltman, United States Navy, that the lepers in the Island of Guam be removed to Molokai, the leper settlement in the Hawaiian group.

THE STUDY OF MALARIA. — It is announced that an institute for the study of malaria has been established as a department of the St. Petersburg Institute of Experimental Medicine. We sometimes wonder where specialism will end.

AN ANSWER (?). — The *Medical Record* announces the following answer to a medical riddle, with the authority: "Can we diagnosticate obliteration of the receptaculum chyli?" — Andrew H. Smith, M.D., in the *Medical Record*. Why, certainly. — *The Sun*.

A CENTENARIAN. — Caleb Baldwin, of Newark, N. J., whose father was a soldier in the Continental Army during the Revolution, celebrated his hundredth birthday on November 28th, and on this occasion a delegation from the Sons of the American Revolution presented to him a gold badge of the society. During his younger days he served for ten years in the New Jersey Militia, and he was in the parade in Newark that was reviewed by Lafayette in 1824.

COMPETITION FOR THE SENN MEDAL. — At the meeting of the Surgical Section of the American Medical Association held June 4, 1897, Dr. Nicholas Senn offered to donate annually a gold medal of the value of $100 for the purpose of stimulating surgical research. The offer was accepted. The committee for this year, consisting of Drs. W. L. Rodman, of Philadelphia, A. J. Ochsner, of Chicago, and H. Horace Grant, of Louisville, desire to announce that: A gold medal of suitable design is to be conferred upon the member of the American Medical Association who shall present the best essay upon some surgical subject. The competition for the medal will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1900. Information may be obtained from and all communications should be addressed to Dr. W. L. Rodman, Chairman, 1626 Spruce Street, Philadelphia.

ORGANIZATION OF ACTING ASSISTANT SURGEONS, UNITED STATES ARMY. At a meeting of active and retired acting assistant surgeons of the United States Army, held in New York, December 5th, for the purpose of formulating a plan to obtain from the Government certain privileges and payments claimed to be due them, a permanent organization was formed under the title of the Association of the Acting Assistant Surgeons of the United States Army in the Spanish War. Dr. Azel Ames, of Massachusetts, was elected president. The relief to be sought at the present session of Congress is to give to each the assimilated rank, pay and emolument of a first lieutenant (staff); full payment for properly granted leaves of absence; commutation of quarters when Government quarters are not found; mileage and travel pay; same rights and eligibility to pensions and to land and other emoluments that attach to assistant surgeons of the United States Army, regular or volunteer; same allowance of extra pay that was given to officers and men of the United States Volunteers in the late war, and preference for appointments over those who have not had previous service in the medical corps of the army and navy, and the Marine-Hospital Corps of the United States. The Treasury officials announced that the salaries of acting assistant surgeons were affected only by the act of Congress that provided for them the amount of $150 per month; that they were not entitled to extra pay provided by Congress for volunteer officers and enlisted men, because they were attached to no regular regiments. It appeared after the war that these officers were neither regulars nor volunteers, and the contracts and subsidiary agreements with the surgeon-general's department were annulled.

SMALL-POX IN HULL, ENG. — Since the commencement of the outbreak at Kingston-on-Hull on March 2, 1899, there have been admitted into the hospitals 588 persons suffering from small-pox. Until about the middle of October the outbreak had not assumed serious proportions. The greatest number admitted in any one week was for the week ending November 25th, namely, 127; the highest number of admissions in one day being 29, which occurred during the same week. Only very few and exceptional cases have been treated at home, and at present all known cases excepting one are isolated in hospital. The origin of the outbreak was possibly due to imported cases, mild and unrecognized, and latterly the diffusion of the infection has no doubt been due to the old hospital, at which institution, however, patients have now ceased to be admitted. — *Lancet*.

BOSTON.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, December 13, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 71, scarlatina 31, measles 44, typhoid fever 13.

NEW YORK.

CITY WASTES DISPOSAL COMPANY. — Capt. F. M. Gibson, U. S. Army, retired, who was deputy superintendent of street cleaning under Col. George E. Waring and retains that position in the present administration, has organized the City Wastes Disposal Company, which offers to put at the service of muni-

cipalities many of the plans which were proved by Colonel Waring to be successful in New York. The company will, in cases where it is desired, furnish plans for the disposition of refuse and garbage, build the plants and either train a force of men for their efficient operation or operate them itself under contract. It also offers to organize a street-cleaning force for any municipality and train the men until this department is capable of independent management.

SELLING OF CIGARETTES. — The Board of Aldermen has passed an ordinance making it a misdemeanor to sell cigarettes to persons under eighteen years of age.

THE LYING-IN HOSPITAL. — In the last annual report of the Society of the Lying-in Hospital, the advance sheets of which have just been issued, Controller Coler's recent investigation into the appropriation of municipal funds for private charities is criticised. "There was apparently no investigation by the committee," it says, "as to what destitution and suffering existed in the cities where no appropriations were made to private hospitals or institutions." The recommendation made by the Controller's investigating committee, that the further granting of public funds in the city of New York be discontinued, is condemned, and the report goes on to say: "The Society since 1896 has received from the city to the extent of $12,000 annually, although performing the largest maternity service in this country, and, on account of the aid it has rendered the city in the treatment of more than 2,300 of its destitute poor during the past year in childbirth, has suggested a *pro rata* allowance for cases cared for in its outdoor department. Should nothing be granted, a serious and unfortunate curtailment of the Society's good work must necessarily follow." Besides his original gift of $1,000,000 for the purpose of erecting a new building on the hospital site, at Second Avenue and 17th Street, it is announced that J. Pierpont Morgan has recently contributed an additional sum of $250,000, rendered necessary to carry out the architect's plans, on account of the increased cost of building materials, especially iron and steel. Mr. Morgan has also donated two city lots on 18th Street, adjoining the hospital, which gives an increased area for building purposes of 3,920 square feet and makes available a total space of 21,750 square feet; his gifts to the Society now aggregate in value over $1,350,000. Patients cared for in the old hospital building have numbered, altogether, 1,450, while certificates have been granted to 136 nurses, each of whom received three months' instruction, and 1,323 students have successfully completed the hospital course in obstetrics. During the past year 2,126 patients have been treated in their own homes and 182 (a smaller number than usual, owing to the discontinuance of the ward service in April on account of the demolition of the building), in the hospital. Until the new hospital is completed by January 1, 1901, it is expected the Society's work will be limited to the care of women in their own homes.

BEQUESTS. — By the will of Vice-President Hobart the sum of $5,000 each is left to the Paterson General Hospital, St. Joseph's Hospital of the City of Paterson, and several other local charities. By the will of Patrick Callahan, formerly a New York lawyer, who died recently in Poughkeepsie, $175,000 is left to be divided equally among five charitable and religious institutions, one of them being the New York Foundling Asylum.

Miscellany.

ANOTHER MEDICAL VICTIM OF PLAGUE.

IT is reported that Dr. Camara Pestana has died at Lisbon of plague contracted while studying the disease at Oporto. Dr. Pestana was chief of the Bacteriological Institute at Lisbon, and an enthusiastic investigator in the field of bacteriology. His contributions to scientific subjects are written in Portuguese, and hence are less known than they would be were they in a language generally read. Commenting on his death the *Medical Press* writes:

"He was dissecting the body of a patient who had died from plague, and in order to extract the virus more thoroughly for analysis he put aside his instruments and worked with his fingers. The poison entered his system under the finger nails and he was struck down with the terrible disease which he was investigating. He was at once moved to an isolated ward set apart for plague sufferers, and there he set himself to study his own case and to record for the benefit of humanity his own symptoms and the course of the disease. He refused to see his brother for fear of infection, and in every way, even in making arrangements for his own funeral, he took every precaution to prevent the spread of the plague. His mind and will conquered his bodily sufferings until the very end, and even as he died he was still trying to indicate to those around him the lessons of his own case. He left a letter for the Queen of Portugal begging for her influence in favor of his colleagues at the Lisbon Bacteriological Institute. So died the heroic doctor, who, as our correspondent says, "had toiled for months amid the horrors of the plague hospital and dissecting-room, and at last gave his life a willing sacrifice for the benefit of the whole world."

LEGISLATION AND THE CONTROL OF VENEREAL DISEASE IN RUSSIA.

IN 1897 a Pan-Russian conference upon syphilis and venereal disease was held in St. Petersburg and a brief record of its labors appeared shortly after in the columns of the *Lancet*. A commission has been formed and is now sitting to carry out, as far as may be practicable, the recommendations made by that conference, more particularly as regards preventive legislation. The interval of two years has been taken up by collecting further information from the governors and other local authorities throughout the country as to the advisability and practicability of carrying out the recommendations in question. Circulars were addressed to these authorities and their replies are stated to form a mass of most valuable

material relating to the prevalence and prevention of venereal diseases in Russia. The immense majority are agreed that the measures at present in force are entirely inadequate and that there is great need for radical changes in the law and in the powers of local authorities to deal with the evil. The greater number of replies are also in favor of leaving the control of the necessary measures in the hands of the local or municipal authorities, a minority preferring that the central Government should take up the matter and that the cost of measures should be provided out of Government funds. Fresh legislation may be expected in the near future dealing with the whole subject of syphilis and venereal disease in Russia — diseases which, as has more than once been pointed out in these columns, are almost incredibly rife in that country. — *Lancet.*

INSANITY IN THE JURY-BOX.

THE *Philadelphia Medical Journal* calls attention to the following significant case:

"A medico-legal point of great interest and importance has been raised by the alleged insanity of one of the jurymen in the recent Ingham-Newitt trial in this city. The facts, as stated, are that a member of the jury became violently insane eight days after the rendering of the verdict and had to be taken to an asylum. The certificate of one of the asylum physicians says that the man when received was very insane, that he was the subject of delusions and auditory hallucinations, and that during the last ten years he had been admitted to the asylum five or six times with similar attacks, and that his periods of maniacal excitement lasted from three to six months. So far as we know, the case is unique in the annals of medical jurisprudence, and requires for its determination a nice discrimination of all the facts.

"From the purely medical standpoint there can be no doubt about the diagnosis. The patient is evidently the victim of recurring mania; and how such a man could ever have been permitted to sit upon a jury passes ordinary lay comprehension. The vital point in the case hinges upon the probable mental state of such a patient only eight days before the outbreak of his maniacal attack. It is well known to alienists that such an attack is always preceded by a prodromal period during which the symptoms are gradually culminating, and there are few experts, we judge, who would be willing to assert that such a patient with such a history could be in a perfectly normal mental state during this prodromal period. The testimony of non-experts, such as his fellow-jurymen, in favor of his sanity, should be received with great caution, because it is well known that these prodromal changes are often most effectually controlled and concealed by the patient. Certainly in the case of a man who had already passed through six maniacal attacks in ten years, the presumption is strongly in favor of his being already in a morbid mental state only eight days before the pronounced outbreak of his attack. The determination of such a case, it seems to us, calls for the highest exercise of the judicial function, aided by expert testimony, and its decision will be regarded with great interest by all who are concerned with the problems of medical jurisprudence."

Correspondence.

DEATH-RATE OF UNITED STATES TROOPS IN THE PHILIPPINES.

BOSTON, December 6, 1899.

MR. EDITOR: — Could there be a more ridiculous blunder than that which appears in the report of the Secretary of War, to the effect that the United States troops in the Philippines have a lower death-rate than the average of American cities, as shown in the following quotation? "The significance of the annual rate of death from disease in the Philippines (17.20 per 1,000) may better be appreciated by comparison with the rates in some of our well-known American cities."

The annual death-rate per 1,000 is: Washington, 20.74; Boston, 20.09; San Francisco, 19.41; New York, 19.28; Baltimore, 19.10; soldiers in the Philippines, 17.20.

Here is an attempt to compare things that are absolutely incomparable, that is, the death-rate of young and vigorous men, at almost the healthiest age of life with the general population of cities embracing people of all ages, from infancy to old age. One might almost as well attempt to compare the death-rate of a university or boys' school with that of a foundling asylum or old ladies' home.

The actual death-rate of young men from twenty to thirty years of age (the average age of soldiers) in America is only seven to seven and one-half per 1,000, or considerably less than half that of the Philippine army.

MEDICUS.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 2, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1147	370	10.17	21.33	1.17	1.71	4.86
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	206	59	6.86	24.01	—	1.96	3.92
Baltimore	506,389	155	43	9.10	—	.65	.65	5.85
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	110	31	14.40	16.20	4.50	5.40	.91
Washington	277,000	102	28	13.86	13.86	.99	.99	8.91
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	66	20	18.12	16.61	7.55	5.01	3.02
Nashville	87,754	29	8	6.90	6.90	—	6.90	—
Charleston	65,165	—	—	—	—	—	—	—
Worcester	111,732	37	11	8.10	5.40	—	—	5.40
Fall River	103,142	20	8	15.00	10.0	10.00	5.00	—
Cambridge	92,520	26	7	11.55	7.60	7.60	3.85	—
Lowell	90,114	26	10	7.69	11.55	—	—	3.85
New Bedford	76,511	21	4	9.52	19.04	—	—	4.76
Lynn	68,218	—	—	—	—	—	—	—
Somerville	64,394	20	8	15.00	30.00	—	5.00	—
Lawrence	59,072	22	4	16.60	4.15	—	—	8.30
Springfield	58,266	15	4	20.00	6.66	—	—	13.33
Holyoke	44,510	11	7	27.27	9.09	18.18	—	—
Brockton	38,759	—	—	—	—	—	—	—
Salem	37,723	5	1	—	20.00	—	—	—
Malden	36,421	11	4	—	9.09	—	—	—
Chelsea	34,235	13	3	7.69	—	—	—	7.69
Haverhill	32,651	9	2	11.11	33.33	—	—	11.11
Gloucester	31,426	6	—	16.66	—	—	—	16.66
Fitchburg	30,523	4	2	—	—	—	—	—
Newton	30,461	6	2	16.66	16.66	—	16.66	—
Taunton	28,527	5	1	—	20.00	—	—	—
Everett	28,102	2	1	—	50.00	—	—	—
Quincy	24,578	6	—	—	—	—	—	—
Pittsfield	23,421	5	—	—	—	—	—	—
Waltham	22,791	5	1	—	20.00	—	—	—
North Adams	21,583	5	—	—	—	—	—	—
Chicopee	18,316	4	2	—	50.00	—	—	—
Medford	17,190	2	2	—	—	—	—	—
Newburyport	15,036	7	—	—	—	—	—	—
Melrose	14,721	3	—	—	—	—	—	—

Deaths reported 2,123; under five years of age 646; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough,

erysipelas and fevers) 216, acute lung diseases 392, consumption 249, diphtheria and croup 104, typhoid fever 41, diarrheal diseases 29, measles 14, cerebro-spinal meningitis 11, scarlet fever 11, whooping-cough 7, erysipelas 6.

From measles New York 11, Boston, Pittsburg and Providence 1 each. From cerebro-spinal meningitis New York 3, Somerville 2, Washington, Worcester, Lowell, Lawrence, Springfield and Holyoke 1 each. From scarlet fever New York 7, Boston and Baltimore 1 each. From whooping-cough New York 4, Pittsburg 2, Baltimore 1. From erysipelas New York 2, Baltimore, Washington, New Bedford and Lawrence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending November 25th, the death-rate was 19.3. Deaths reported 4,216: acute diseases of the respiratory organs (London) 350, measles 117, diphtheria 97, fever 64, whooping-cough 58, scarlet fever 41, small-pox (Hull) 22.

The death-rates ranged from 12.5 in Huddersfield to 24.6 in Salford; Birmingham 24.0, Bradford 16.3, Cardiff 15.2, Derby 13.2, Liverpool 13.8, London 17.5, Manchester 19.5, Newcastle-on-Tyne 19.2, Nottingham 19.8, Portsmouth 23 5, Sheffield 22.7, Sunderland 18.3, West Ham 16.8.

METEOROLOGICAL RECORD

For the week ending December 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	29.95	37	43	31	67	48	58	N.W.	W.	9	6	O.	C.	
M..27	29.91	37	42	32	65	58	62	N.W.	S.	10	5	C.	O.	
T..28	29.80	42	46	38	65	69	67	S.W.	S.	7	7	O.	O.	
W..29	29.71	44	53	35	82	65	74	W.	W.	9	8	F.	C.	
T...30	29.82	42	47	37	77	77	77	W.	S.E.	1	3	O.	O.	
F....1	29.82	44	54	35	100	85	92	N.W.	S.E.	2	14	C.	F.	
S....2	29.60	49	56	42	80	54	67	W.	W.	10	5	R.	C.	.01
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatenings; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 9, 1899.

D. DICKINSON, medical director, promoted to medical director.

G. E. H. HARMON, medical inspector, promoted to medical inspector.

A. W. DUNBAR, passed assistant surgeon, detached from the "Resolute," when placed out of commission, and ordered home and to wait orders.

R. K. MCCLANAHAN, assistant surgeon, ordered to the Washington Navy Yard.

W. M. GARTON, assistant surgeon, detached from the Washington Navy Yard and ordered to the "New York."

D. N. CARPENTER, assistant surgeon, ordered to the Boston Navy Yard.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 7, 1899.

MEAD. F. W., surgeon. Granted leave of absence for one day. December 7, 1899.

MAGRUDER, G. M., surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 2, 1899. To proceed to London, Eng., for duty. December 4, 1899.

PERRY, T. B., passed assistant surgeon. Relieved from duty at New York, N. Y., and directed to proceed to Baltimore, Md., for duty and assignment to quarters. December 1, 1899.

WERTENBAKER, C. P., passed assistant surgeon. To rejoin station at Wilmington, N. C. December 1, 1899.

SMITH, A. C., passed assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 2, 1899. To proceed to Hamburg, Germany, for duty. December 2, 1899.

BLUE, RUPERT, passed assistant surgeon. To proceed to Genoa, Italy, for duty. December 4, 1899.

SPRAGUE, E. K., passed assistant surgeon. To proceed to Antwerp, Belgium, for duty. December 4, 1899.

GREENE, J. B., passed assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 4, 1899.

TABB, S. R., assistant surgeon. To proceed to Savannah Quarantine Station (Georgia) for temporary duty. December 2, 1899.

GRUBBS, S. B., assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 2, 1899. To proceed to Havre, France, for duty. December 5, 1899.

HOBDY, W. C., assistant surgeon. To report at Washington, D. C., for special temporary duty and then to rejoin station at New York, N. Y. December 1, 1899. Relieved from duty at New York, N. Y. (Stapleton), and directed to report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 4, 1899. To proceed to Southampton, Eng., for duty. December 5, 1899.

CORPUT, G. M., assistant surgeon. Upon being relieved from duty at Baltimore, Md., to report at Washington, D. C., for special temporary duty; then to proceed to New York, N. Y., reporting to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 1, 1899.

THORNBURY, F. J., assistant surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to the San Francisco (Cal.) Quarantine Station for duty. December 2, 1899.

GOLDSBOROUGH, B. W., acting assistant surgeon. Granted leave of absence for two days. December 1, 1899.

CHANGES IN THE STAFF OF THE CARNEY HOSPITAL.

Gynecologist to out-patients: DR. C. H. HARE; assistant in gynecology: DR. J. M. HASTINGS; ophthalmic surgeon: DR. W. J. DALY; assistant ophthalmic surgeon: DR. E. W. CLAP.

JAMES J. MINOT, M.D., *Secretary Carney Hospital Staff.*

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 18th, at 8 o'clock.

Dr. Wm. A. Morrison, by invitation, will show two "Strong Men"; also a man who by diet and training has reduced his weight from 410 pounds to 200 pounds.

Dr. E. S. Boland will show a case of "Idiopathic Pneumothorax" which was cured by aspiration.

Paper: "Typhoid Spine," by Drs. Chas. F. Withington and Robert W. Lovett.

ARTHUR K. STONE, M.D., *Secretary*, 657 Boylston Street.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Clinical Medicine, Pathology and Hygiene will hold its meeting at 19 Boylston Place, Wednesday, December 20, 1899, at 8 P. M.

At 8 o'clock: Dr. Percy Musgrave will read a paper entitled "Report of Two Cases of Acute Uremia; Venesection; Recovery."

At 8.15 o'clock: Dr. J. J. Putnam, "The Training in Co-ordination of Ataxic Patients by Fränkel's Method, with Demonstrations."

J. BERGEN OGDEN, M.D., *Secretary*,
Harvard Medical School, Boston.

RECENT DEATHS.

WILLIAM PITT BRECHIN, M.D., M.M.S.S., died in Boston, December 10, 1899, aged forty-eight years.

WILLIAM A. LOCKWOOD, M.D., of Brooklyn, committed suicide on December 8th. He was a graduate of Bellevue Hospital Medical College and afterwards pursued his medical studies in Paris. Later he settled in Norwalk, Conn., his native place, where he was for many years the leading physician and one of the most prominent medical men in Connecticut.

EDGAR MILLER, M.D., one of the best known physicians of Suffolk County, N. Y., died recently at his home at Sag Harbor, L. I. He was seventy-five years old and had practised in Sag Harbor and vicinity for over fifty years.

BOOKS AND PAMPHLETS RECEIVED.

Forty-fourth Annual Report of the Trustees of the Northampton Insane Hospital, for the Year ending September 30, 1899.

The Place of the Female Nurse in the Army. By Col. Dallas Bache, Assistant Surgeon-General, U. S. Army. Reprint. 1899.

Some of the Rare Forms of Hernia and Their Radical Treatment. By R. Harvey Reed, M.D. (Univ. Pa.), Rock Springs, Wyo. Reprint. 1899.

Original Articles.

DISINFECTION AND PREVENTION IN THE SICK-ROOM.[1]

BY CHARLES HARRINGTON, M.D., BOSTON.

Upon the discovery that he has to deal with a case of one of the diseases commonly denominated contagious, the physician directs that the patient be isolated, and that so far as is possible all infectious matter be so treated that it is robbed of its power to work injury to others. Whether the results of his foresight will be what they should be or a positive injury is largely dependent upon the care and thoroughness with which the preventive measures are instituted and carried out, for it can hardly be denied that half-way measures or the unintelligent carrying out of proper directions, with the consequent lulling into a sense of safety, may be productive of as much harm as absolute neglect of all precautions other than those dictated to one and another individual by a knowledge of possible personal danger.

The measures recommended for safeguarding the health of others in time of sickness comprise isolation, prevention of dissemination of infectious material, and disinfection, and these, I predict, will be enforced at no distant day by all intelligent communities not alone in the so-called contagious diseases, but in all diseases of a serious nature spread directly or indirectly by any of the excretory products of the body. Out of deference to the controversy over the right of the two words infectious and contagious to have separate and distinct meanings, I will here declare the sense in which I employ them. Infectious diseases include all those which depend upon the presence of micro-organisms in the tissues, while the contagious class of infectious diseases includes those transmissible from man to man by direct contact or close proximity. We do not commonly reckon typhoid fever, for instance, as a contagious disease, but when we read that of 206 cases of that disease investigated by Dr. Herbert Peck,[2] 28, or 13.6 per cent. were traced to direct infection in the sick-room, we must agree with him that the danger is more common than is generally supposed, and that it has not received the attention that it deserves. Lobar pneumonia and pulmonary tuberculosis are also not included in the contagious class, and yet we are not insensible of the fact that house epidemics of the former are not uncommon, and that the latter is largely spread by overcrowding and lack of ventilation.

It is not my intention to enter here upon any discussion of the important question of the advisability of enforcing what may be regarded as unnecessarily harsh measures for the suppression of tuberculosis, nor to touch upon the extension of supervision by public authority of the handling of the sick, but rather to consider the efficiency of preventive measures already practised.

Isolation.—The object of isolation is to remove the patient as completely as possible from all chance of acting as a menace to the health of others, whether dwelling beneath the same roof or not. In the dwellings of the poor it is usually most difficult and frequently impossible to isolate the patient in a proper manner because, primarily, of lack of space; in the homes of the well-to-do and of the rich, where plenty of room is available, it is not uncommonly the case that isolation is a mere farce because of failure on the part of the family to grasp the full importance of thoroughness, in spite of instruction by the attending physician and by the representative of the local authority. In the minds of many, isolation is complete when the patient is in a room by himself, with the door leading therefrom into the hall open or shut according to no particular rule, but according as accident has left it. To such minds the air of a sick-room is a deadly contagion to which the doorway, not the door, opposes itself as a most efficient barrier. We all have met and know the person well who says, "I was very careful not to enter the room, but talked with him from the doorway." Often the door is left open, and its place is taken by a sheet wetted occasionally by some disinfectant solution. To this thin obstacle, with more or less of open space below and at the sides, the morbific agents supposedly in the air are presumed to attach themselves as the natural processes of ventilation set the air in motion from the room outward; or, if not this, the agent with which the sheet has been wetted, perhaps hours ago, is supposed to exert a purifying influence upon every particle of passing air. Under either of these conditions, if infective matters are floating in the air of the sick-room there is no reason why they should not be carried to all parts of the house. Even shutting the door may not accomplish all that is desired in respect of preventing efflux of air from the sick-room to other parts of the house, as can be shown by a most simple experiment. Between the bottom of the door and the threshold there is usually a fair-sized interval through which under the ordinarily existing differences of temperature, and, therefore, of density, a constant stream of air is passing inward or outward. If one holds a lighted match near this space, the flame, if the air is in motion, is inclined one way or the other according as the leakage is away from or toward the room. Sometimes the current is so strong that the match is extinguished. This may seem to be a small matter, or, indeed, insignificant, but under some circumstances it may well be thought worthy of some extra care, in which case sandbags such as are used on window sashes may be found serviceable.

In those cases in which aërial infection is supposed to occur the ideal place for isolating the patient is an upper floor or an L which can be shut off entirely from the rest of the house, and ventilated thoroughly by direct communication with the outer air. Where such an area is not available, the room should be closed as completely as possible, and the immediately adjoining rooms should be kept well aired. In the class of cases in which aërial infection under ordinary careful attention to the excretory products is not to be expected such extensive precautionary measures are not necessary, and here the main points to be considered are the prevention of dissemination of infective material and the best method for the immediate destruction of the morbific agents as they are yielded by the patient.

Prevention of dissemination.— It is quite unnecessary to dwell upon the precautions always observed by careful, experienced practitioners against the carriage of infective material by themselves from the sick-room, but it may not be out of place to mention the carelessness displayed by the thoughtless but enthusiastic beginner whom we all have seen leaning down upon the mattress and bedclothes, supporting himself by his hands, examining whatever attracts his attention,

[1] Read before the Boston Society for Medical Improvement, October 23, 1899.

[2] British Medical Journal, Sept. 2, 1899.

whether it be the body of the patient or the vessels containing the excretory products, and ever and anon stroking with his now possibly infected hands his hair and beard, or rubbing them against his own clothing or that of his neighbor, or hiding them in his pockets. Such carelessness on the part of the nurse in attendance would be contrary to her training, and on the part of the student or young practitioner is equally contrary to the instruction which he is supposed to have received. Absolute care in this particular is imperatively necessary on the part of all who visit or are in attendance in the sick-room.

In preparing the room for the reception of the patient, it should be borne in mind that the less furniture there is present, the less there will be to undergo the process of disinfection on the termination of the sickness. Above all, the carpet should be removed at the very outset, and all upholstered furniture and draperies with it. Ordinary dusting and broom sweeping, which stir up the dust so thoroughly, should be absolutely interdicted, and cleaning and wiping with mops and cloths not wet, but well moistened with a disinfectant, should be substituted.

The used bed linen, the patient's body linen, the napkins, towels and other cloths that may become infected may be put to soak in disinfectants at once and on the spot, or may be placed within cotton bags wet with disinfectant, and conveyed at the proper time to the kettle, into which, without further handling and without opening, the whole is placed and then boiled for an hour.

The uselessness of attempting aërial disinfection in the presence of the patient is not apparently as well recognized as it should be. The placing of small amounts of chloride of lime, carbolic acid, iodine, sulphonaphtol and other disinfectants in saucers and other open dishes, and distributing them about the room has no other effect than the production of odors which may be an annoyance to the patient. If disinfection could be so easily accomplished, the local boards of health would be relieved of much work and very large expense. With the agents at present available for germicidal action, aërial disinfection in the presence of the patient is absolutely impossible, for they must be used in such concentration as to be quite irrespirable. But we must not overlook the disinfectant power of direct sunlight and the beneficial effects of constant dilution of the impurities of the air by proper ventilation. The latter is materially assisted by the maintenance of an open fire when climatic conditions will not permit cross ventilation by means of open windows, and thus practical utility and the conferring of cheerfulness are combined.

The attention on the part of the nurse to hands, hair, clothing, etc., and the frequent necessity of providing separate outfits of eating utensils for the patient, and of destroying all unused portions of his meals, need no more than passing mention.

Disinfection of the excretory products.—The materials which require thorough disinfection include those from the mouth, throat and nose in diphtheria and whooping-cough; from the lungs in influenza, pneumonia and pulmonary tuberculosis; from the skin in the acute exanthemata, especially during desquamation; vomitus in yellow fever and, conditionally, in other diseases; stools in cholera, dysentery, typhoid fever and tubercular conditions of the alimentary canal; and the urine in typhoid fever, and perhaps, also, in some of the exanthemata. These may be destroyed in two ways according to circumstances. Those in not too large bulk and not too fluid, such, for example, as sputum and discharges from the nose, mouth and throat, received on cloths, may be most effectually disposed of by burning, if there is a fire immediately at hand. Bulky matters such as stools, urine and vomitus, and objects actually or possibly infected by them, such as bedclothing, body linen, etc., which must be purified, but not destroyed, must be brought into intimate contact with some disinfectant which fulfils the requirements of a good germicide, namely, that it shall kill all forms of bacteria and spores within reasonable limits of time, shall not be made inert by organic matters with which the bacteria are associated, and shall not subject the attendant to any dangerous consequences. If, in addition, it be cheap, free from disagreeable odor, and incapable of injuring cotton, linen and other textiles either by causing stains or by reducing their strength, so much the better. Where shall we find such an agent? Shall we find it in the shops put up in pints and quarts with attractive labels which reveal or not, according to the maker's fancy, the nature of the active ingredient? No, we are not likely to find it there; at least, that is my experience.

In March last Dr. Richard M. Pearce and myself reported at a meeting of the Boston Society of Medical Sciences the results of our examination of such proprietary disinfectants as we could find in the apothecary shops of Boston, and it may not be out of place to report them again in condensed form at this time, for the brands obtained and examined include several that are held in high esteem by the profession generally. The list included the following: Marsh's Instantaneous Disinfectant, Disinfectine, Ozonos, Bromochloralum, Royal Disinfectant, Excelsior Disinfectant, Phenol Sodique, Hovey's Chloride of Zinc, Platt's Chlorides, Carbolic Purifying Powder, and Solution of Chlorinated Soda. These were tested with anthrax spores, typhoid cultures, typhoid stools, diphtheritic membrane and tuberculous sputum. The mixture of material and disinfectant was intimate, and the length of time of the contact was in each case two hours. So far as demonstrating efficiency is concerned, the results were distinctly disappointing, for but one of this list was successful in more than half of the ten tests to which each was subjected, and this one failed in three. One of them failed eight times, another nine times, and three failed every time. Not one of them was successful in sterilizing the tuberculous sputum. Those which failed in all the tests were Carbolic Purifying Powder, Royal Disinfectant, and Phenol Sodique. Those that failed eight and nine times were, respectively, Hovey's Chloride of Zinc and Bromochloralum.

In justice to the makers of these preparations, it must be said that in no sense can any of these disinfectants be properly classed as a fraud, for chemical analysis shows that they are one and all composed of substances that are generally regarded as disinfectants, and are so recommended in many of our standard works on public health. The substances found include chloride of zinc, chloride and sulphate of aluminum, alum, permanganate of potassium, salts of lead, iron and copper, neutral tar oils, hydrochloric and nitric acids, and others. We must, therefore, believe that they are manufactured and sold in good faith. But even so, we cannot use disinfectants that kill *almost*

every time, or that kill only occasionally; they must kill *every* time, and we must, therefore, look elsewhere.

Shall we use corrosive sublimate? Its action on many substances with which it may come in contact, the readiness with which it is thrown out of solution and made inert by matters associated with the bacteria, and its very poisonous character make this agent unreliable for general purposes and undesirable. Shall we use caustic lime? Lime is a good disinfectant but it has its disadvantages. It must be used in the freshly slaked state; it must be applied in very considerable amounts; it must be very intimately mixed with the material to be disinfected, for it is not very capable of self mixing; and after it has performed its office, it must be disposed of in such a way as to cause no trouble. How to do this in a city block may be quite a problem. One's first impulse would suggest throwing it into the water-closet, but such disposal would simply create work for the plumber, for the pipes would soon be occluded. Moreover, lime cannot be used for purifying linen and other textiles. Chlorinated lime is open to all the objections that apply to lime, and the additional one of having a very disagreeable odor. Where, then, shall we turn?

In addition to the agents already mentioned, we tried a five-per-cent. solution of carbolic acid, sulphonapthol, and a somewhat similar substance which I will designate solution B, both in five-per-cent. strength, and a two-and-one-half-per-cent. solution of formalin, one per cent. formaldehyde. Of these the first mentioned has for years been a favorite standby, objectionable to some only on account of its odor, and recommended for general purposes in two-, three- and five-per-cent. strength. It killed the bacilli in the sputum, but was successful only once in five trials with typhoid cultures and stools and diphtheritic membrane. The sulphonapthol solution, which cannot be praised for its odor, was also successful with sputum, and it surpassed the carbolic solution in efficiency by scoring two successes in five other trials. The remaining two preparations were uniformly successful, though it must be said that they were tried only six times each, twice with typhoid cultures, twice with typhoid stools, and once each with sputum and membrane. Our previous investigations with formaldehyde, however, seemed to us to make further tests unnecessary, and as to the solution B, it has a most disagreeable odor and is, moreover, a patented article. I will not mention its true name because I have no doubt as to one use to which this paper would be put, and because I have no desire to have even the appearance of writing "reading notices." I have no hesitation in mentioning formaldehyde, even though an enterprising concern interested in its sale makes it a practice to reprint, without permission, any articles which may serve its purpose. All formaldehyde is good, however, and, so far as I know, that sold by one is no better than that furnished by another.

Formaldehyde possesses all the qualifications of a good disinfectant, as mentioned above. In diluted form it has no unpleasant odor, it causes no injury to fabrics, it makes no stain, it is not as expensive as the cheapest of the proprietary preparations, and, most important, it kills every form of micro-organisms with which it is placed in direct contact.

I do not wish to be understood as asserting that there are no other efficient disinfectants than formaldehyde, but it happens that I cannot speak of them from the standpoint of personal experience. Doubtless there may be others as good, but it would be difficult to conceive a superior. Ten years ago Fränkel demonstrated the superiority of the cresols over carbolic acid, and within the past two years a number of preparations containing them in their various isomeric forms and in various combinations have been placed upon the market. They have been extensively studied, and the original conclusions of Fränkel have been confirmed again and again, but the most favorable reports thus far published present no results which entitle them to admission to the class with formaldehyde. A recent publication by Seybold, who investigated and compared a number of different preparations, shows that not one of them is effective against anthrax spores, which we know are quickly destroyed by formaldehyde. It is but fair to add that solution B, which we found to be so successful with stools, membrane and sputum, contains a considerable percentage of cresols.

Besides the cresols, various other organic substances have been extensively exploited within recent times, but each one seems to fail in some one or more particulars.

Whatever the disinfectant used in the sick-room, its application must be in no niggardly amount, for in practical disinfection extravagance is a greater virtue than too strict economy. The infected objects should be submerged in the solution so that the agent shall come into contact with the entire mass. In the case of stools, urine and vomitus, at least an equal volume of the disinfectant should be added and the whole should be carefully mixed. Although in the case of formaldehyde the destruction of the organisms is accomplished in a much shorter time, it is best to continue the exposure for about two hours, thus erring, if at all, on the side of safety. At the end of two hours, the sterilized excretory matters may be finally disposed of by way of the water-closet, and the bed linen and similar articles sent to the wash-tub. There seems to be no particular and good reason for supplementing complete destruction of pathogenic organisms with any further process of disinfection, but if it suits one's ideas of necessity, the customary prolonged boiling can, at least, do no harm.

EXPERIMENTS UPON THE DISINFECTION OF ROOMS WITH FORMALDEHYDE GAS IN THE CITY HOSPITAL AT CHARLOTTENBURG, BERLIN.

BY A. W. FAIRBANKS, M.D., BOSTON, WITH REMARKS BY PROF. E. GRAWITZ, M.D., BERLIN.

(Concluded from No. 24, p. 595.)

THIRD EXPERIMENT.

In the following trial a special effort was made to obtain bacteria of the highest virulence. The anthrax spores were obtained from cultures made from the blood of a mouse that had been infected with bacilli which had immediately previously passed through several mice. The last mouse infected succumbed in twenty hours. The others died in from thirty to twenty-four hours. The culture used was but two days old.

Pyocyaneus. — Culture from the blood of a mouse

that had died, twenty-two hours after infection, of pyocyaneus septicemia.

Diphtheria. — Fresh culture from a severe case in the hospital at the time.

Typhoid. — Fresh bouillon culture, vigorous movement.

Staphylococci albi. — Culture from the pus of a septic wound.

Streptococci. — Culture from the pus of a septic wound.

Each of these forms was mixed with sterile water, and the woollen and linen fragments of cloth above described were allowed to soak in these mixtures, and thereafter dried for twenty-four hours.

From these pieces several of every kind were withheld in sterile glasses as control.

(1) The other infected fragments were arranged as follows: (*a*) Several pieces of each sort *openly* exposed to the gas; (*b*) several pieces of each sort *enclosed* between two layers of cloth; (c) several pieces of each sort *enclosed* between two mattresses; (*d*) several pieces of each sort *enclosed* in many folds of linen — eight to twelve.

Three of the different bacterial forms, that is, anthrax spores, pyocyaneus and staphylococci, were thoroughly mixed with dust and placed in open glasses in the extreme corner of the room, from which the dust was taken out of which the bacillus mentioned in the previous trials was obtained. This was done in order to determine to what degree the dust afforded protection to the organisms against the action of the formaldehyde.

(2) Besides the infected fragments of cloth there were also exposed to the gas: (*a*) Several pieces of diphtheritic membrane from cases in the hospital; (*b*) pus that had proved virulent for a mouse and from which streptococci were obtained; (*c*) anthrax spores on agar (an old tube culture); (*d*) tubercle bacilli on glycerin agar.

(3) The following objects: Variously colored silk patent leather and common leather, soft and hard rubber, gold, steel, brass, nickel and iron, and polished wood.

(4) Several mice and a rabbit. One hundred and ninety tablets were used; approximately two grammes of formaldehyde per cubic metre. Upon opening the room at the end of twenty-five hours the tablets were found completely burned out. The same irritative effect as previously was experienced. The door was, however, immediately closed, the irritation of the gas soon ceased, and it was possible, without disagreeable results of any kind, to remain in the apartment for one hour and a half. Upon the pulse no effect was noticed, beyond perhaps a slight acceleration. The mice and rabbit were first examined and found, as before, unaffected.

It may here be noted that, in my own case, after one and one-half hour's stay in the room not the slightest conjunctivitis was present.

Cultures from the nasal membrane of the rabbit showed a colony of the staphylococcus aureus. Cultures from my own nasal mucous membrane before entering the room showed the presence of staphylococcus albus. Cultures made after the one and one-half hour above mentioned gave, likewise, colonies of the same organism.[5]

Upon the various articles in the room not the slightest deleterious effect could be found. It appears to me of particular interest and importance that the leather appeared in nowise affected. Its pliability was certainly as great as before its exposure to the formaldehyde. The objects were placed upon a chair almost directly over the disinfector. The infected fragments were washed, as before, in a sterile one-per-cent. solution of ammonia, thereafter in sterile water and placed in bouillon. They were kept in the incubator at 37° C.

As the control cultures of streptococci gave no

TABLE II.

Bacteria.	Result of Control Cultures.	Position of the Infected Pieces in the Room.	Result after 25 Hours' Exposure to Formaldehyde.
Anthrax (spores)			
a″	Profuse growth in 24 hours.	Openly exposed.	No growth at the end of 2 weeks.
b″	" "	Between two layers of cloth.	Sparse growth of typical bacilli in 48 hours.
c″	" "	Between two mattresses.	Profuse growth of typical bacilli in 24 hours.
d″	" "	Wrapped in folds of linen.	" " "
e″	" "	Mixed with dust, in a glass.	" " "
Diphtheria			
a″	" "	Openly exposed.	No growth at the end of 2 weeks.
b″	" "	Between two layers of cloth.	Growth of typical bacilli in 48 hours; transferred to Löffler's serum: typical growth.
c″	" "	Between two mattresses.	Growth of typical bacilli in 24 hours; also upon Löffler's serum.
d″	" "	Wrapped in folds of linen.	No growth at the end of 2 weeks, either in bouillon or upon Löffler's serum.
Typhoid			
a″	" "	Openly exposed.	No growth at the end of 2 weeks.
b″	" "	Between two layers of cloth.	Growth of typhoid after 48 hours.
c″	" "	Between two mattresses.	Growth of typhoid after 48 hours.
d″	" "	Wrapped in folds of linen.	No growth at the end of 2 weeks.
Pyocyaneus			
a″	" "	Openly exposed.	" " "
b″	" "	Between two layers of cloth.	" " "
c″	" "	Between two mattresses.	Typical growth in 24 hours.
d″	" "	Wrapped in folds of linen.	Typical growth on agar and in bouillon, with marked fluorescence after 2 days.
e″	" "	Mixed with dust, in a glass.	No growth at the end of 2 weeks.
Staphylococci			
a″	" "	Openly exposed.	" " "
b″	" "	Between two layers of cloth.	" " "
c″	" "	Between two mattresses.	Sparse growth at the end of 4 days.
d″	" "	Wrapped in folds of linen.	Sparse but typical growth after 4 days.
e″	" "	Mixed with dust, in a glass.	No growth at the end of 2 weeks.

[5] Note the statement in connection with the suggestions of Trillat and Berlioz Comptes Rendues, 1893, vol. cxv, page 290.

growth, these organisms are not included in the following results. These results represent a daily observation of over two weeks (Table II).

At the end of two weeks a considerable portion of the bouillon holding the pieces anthrax *a''*, *b''*, *c''*, *d''*, *e''* was in each case injected into mice. The mouse injected with anthrax *a''* was living a week later, without having at any time shown signs of infection. The other mice, injected with anthrax *b''*, *c''*, *d''* and *e''*, all died within a period varying from twenty-four to sixty hours, and anthrax was demonstrated in the blood by microscopical preparations and by direct culture in each case.

(2) *Diphtheritic membrane.* — The following experiments with diphtheria membrane were made, a portion in this trial, the other portion in a later trial. They are here included together as a matter of convenience. The time of exposure (twenty-four hours) and the strength of formaldehyde, two grammes per cubic metre, were in both cases the same. The membranes were taken from fresh cases with extensive exudation in pharynx and on the palate. Cases were only included in the experiments when the control cultures, *from both the fresh and dried* membrane, were positive. The following procedure was employed:

From each membrane employed, cultures on Löffler's serum were made immediately after being taken from the throat, and showed at the end of twenty hours profuse growth of typical Klebs-Löffler bacilli. Each membrane was now divided into halves; one half was placed in a sterile glass and reserved as a control; the other half was placed in the room and exposed to the formaldehyde for twenty-four hours. At the time of opening the room the control pieces were in each case softened with sterile bouillon,[6] finely divided, and transferred to tubes of Löffler's serum. From each piece two tubes were infected. The room was then opened and the same procedure was employed with the corresponding halves that had lain exposed to the gas. The results are best given in Table III.

TABLE III.

Membrane.	Result of Immediate Control of Culture from Fresh Membrane.	Result of Control Culture from Dried Membrane after 24 Hours.	Result of Membrane exposed 24 Hours to Formaldehyde.
I.	Positive after 20 hours.	Positive after 20 hours.	Typical growth of characteristic bacilli at the end of 24 hours.
II.	" "	" "	" " " "
III.	" "	" "	" " " "
IV.	" "	" "	" " " "
V.	" "	" "	" " " "
VI.	" "	" "	No growth at the end of 5 days.
VII.	" "	" "	No growth at the end of 5 days.

In two of the above cases, namely, IV and V, there appeared in the control cultures from the fresh membranes, with the colonies of the diphtheria, also colonies of the staphylococcus aureus, streptococcus and a large bacillus. In the cultures from the dried control pieces there appeared, in addition to the bacillus of diphtheria, only the staphylococcus and the large bacillus; while in the cultures from the pieces exposed to formaldehyde the bacillus of diptheria alone appeared.

In five of the seven different membranes employed positive growth of typical diphtheria occurred when the pieces after exposure were finely divided and transferred to suitable culture medium. In two of the seven no growth whatever occurred. The control cultures, even in membrane dried for forty-eight hours, were pronounced and characteristic in every case.

(3) *Pus exposed in a sterile glass.* — Control cultures in bouillon showed, before the exposure, typical and long chains of streptococci and isolated cocci. An injection of a portion of this pus in a mouse was followed by death in five days.

Upon opening the room a portion of the pus was found dried, a portion still moist. From the dry no growth could be obtained *in bouillon* after ten days' standing at 37° C. From the moist was obtained profuse growth of the staphylococcus albus after twenty-four hours.

It may here be mentioned that a similar experiment was made with the pus-soaked dressings from a case of empyema, with like result.[7] In this case the streptococci were of unusual virulence, as evidenced by animal infection.

(4) *Anthrax spores.* — This was an old laboratory culture on Löffler's serum and was placed in the room, with the cotton wad removed, during the exposure. Cultures from this tube after twenty-four hours' contact with the gas gave positive growth of anthrax.

(5) *Tubercle culture on glycerin agar.* — Also exposed with wad removed from the tube. Cultures made from the tube after opening the room, showed at the end of two weeks very slight increase in size of the colonies.

In comparing briefly the results of the preceding experiments, we note in particular the following points:

(1) That in every case where the formaldehyde was allowed free access to the infected fragments of cloth, a sterilization of the respective fragments occurred. Not only could no growth be obtained, for instance, from the pieces previously infected with anthrax, although these pieces remained in bouillon under conditions and temperature in the highest degree favorable to the growth of this bacillus, but the injection of this bouillon into mice proved also absolutely negative in results, notwithstanding the extraordinary sensitiveness of mice to this organism. In this respect all of the experiments agree.

(2) That in the second order of arrangement of the infected pieces — where they were placed between two layers of cloth; where the gas had not free access — a difference in the results appears, a difference

[6] The pieces were found dried and shrivelled at the end of twenty-four hours in the case of the control halves as well as the halves exposed.

[7] Too much weight should not, however, be attached to this result, as no *control* cultures were made from *dried* pus that *had not* been exposed to formaldehyde. The control cultures were made from fresh moist pus. I may say, however, that I have in other cases not connected with these experiments with formaldehyde frequently obtained profuse growth from pus after it had dried. In this indirect way, therefore, I have no reason to think that the result would have been otherwise here had it been proven.

only to be explained by a variance in virulence of the bacteria.

In the first and second trial, for example, no growth in the case of any of the organisms with which these pieces were infected occurred, even when, as in the second trial, anthrax spores were used.

In the third trial, on the other hand, a negative result with these pieces was only obtained in the case of pyocyaneus and staphylococcus. Anthrax, diphtheria and typhoid showed positive growth, and the injection into a mouse of a portion of the bouillon containing the anthrax piece was followed by death in ten hours. The anthrax spores of this third trial were obtained from a culture made two days previously from the blood of a mouse that had died in twenty hours.

The bacilli from which these spores were formed had passed for several generations through mice. They were therefore undoubtedly of a high degree of virulence. The same may be said of the diphtheria and typhoid bacilli used in this experiment.

(3) That in the third arrangement, between mattresses, and in the fourth, wrapped many times in linen, there occurred in all the trials positive growth of anthrax, without exception. By the other pathogenic bacteria there occurred in the first two trials in some cases growth, in others not. In the third trial there ensued growth from all pieces that were previously placed between mattresses, without exception of any of the various classes of bacteria, but of the pieces wrapped in linen in this experiment only the anthrax and staphylococci showed growth.

Interesting appears to me the result with diphtheria in this experiment: The infected fragments taken from between layers of woollen cloth or from between mattresses gave profuse and positive growth, while those wrapped in linen remained sterile.

(4) Of the greatest interest appear to me the results with diphtheritic membrane. That the drying of such a membrane encloses the bacilli in an encasement of albuminous material — penetrable perhaps only by steam — is easily understood.

(5) The fact that in every trial there was obtained from the dust in a corner of the room, after exposure to formaldehyde, a profuse growth of a spore-forming bacillus would seem to indicate that the spores of this bacillus possess great resistance. The fact, however, that profuse growth was obtained from the anthrax spores, after having been mixed with dust and exposed to the formaldehyde, would seem to indicate that the dust itself affords the spores of both organisms no inconsiderable protection. Nevertheless the fact that from the dust of an ordinary room, usually so diverse in its bacterial life, but one form was obtained indicates that for the majority of dust or air bacteria (non-spore forming?) this protection does not occur.

It must be noted that the conditions under which these laboratory experiments were conducted were much more severe than any likely to occur in practice; that much more was required of the power of formaldehyde as a disinfectant than would be demanded in the disinfection of a common room. The presence of anthrax spores in the dust of such a room would never occur in practice, and that we would ever have to do with anthrax bacilli in the disinfection of rooms is extremely unlikely.

The conditions for the further growth of any of the bacteria that might survive the exposure to the gas were in the highest degree favorable to these organisms, and afford a severe test of the power of the disinfectant. From the results of the preceding experiments, therefore, I think we may assume that the power of formaldehyde, as a disinfectant — at least in the strength of two grammes per cubic metre air space — is, upon all objects to which the gas has free, unobstructed access, positive, and absolutely reliable; and this in the case, also, of organisms of a virulence and tenacity of life of exceptional degree.

The harmlessness of the gas itself to higher forms of life, in such concentration as would ordinarily be employed and for a moderate length of time, is of interest, although practically of little importance, since no higher forms of animal life would be exposed to its fumes. The failure of any deleterious effect upon the various inanimate objects exposed to its fumes is of great practical importance,[a] and especially so in the case of leather. For the disinfection of shoes this substance appears to me as particularly to be recommended. We have had hitherto no adequate means of disinfection for leather, especially in the form most requiring disinfection.

TABLE IV.

Bacteria.	Result of Control.	Position of Piece.	Result of Culture after Exposure.
Diphtheria.	Positive in 24 hours.	Openly exposed on a table.	No growth at the end of 3 weeks.
Pneumonia.	" "	" " "	" " "
Streptococcus.	" "	" " "	" " "
Staphylococcus aureus.	" "	" " "	" " "
Pyocyaneus.	" "	" " "	" " "

REMARKS BY PROFESSOR GRAWITZ.

The preceding experiments show in most satisfactory manner the efficiency of this form of formaldehyde and the reliability of the apparatus employed for all ordinary purposes of room disinfection.

The bactericidal power of formaldehyde gas, by the use of 1.5 to two grammes (1.5 to two tablets) per cubic metre air space, is proven to be fully efficient against the ordinary infectious germs, such as typhoid, diphtheria, pyocyaneus and the pyococci and even anthrax, wherever the gas was allowed free access to the organisms. Even through moderately thick covering, most of the bacteria were killed, anthrax excepted.

That large pieces of tissue, such as diphtheritic membrane, masses of purulent material, etc., were not rendered sterile by the gas is of as little account for all ordinary purposes of room disinfection as is the fact of the resistance of the anthrax spores when not freely exposed, inasmuch as in the usual practice of disinfection we should have to do only in the

[a] It is possible that in the case of some of the aniline colors a change might be produced by the formaldehyde. None such was, however, observed in the colors exposed — ordinary blue, red, brown, black silk.

rarest of cases with the latter organisms, and in the former case all particles of membrane, etc., of any considerable size may be easily removed by means of a damp cloth. It is of much greater practical importance that the dust that has become infected and has fallen to the floor of the sick-room be thoroughly disinfected. That this is done, wherever the ordinary infectious germs are concerned, the above experiments have shown.

In accordance with these investigations I have already caused a number of rooms of this hospital, infected by diphtheria, scarlet fever, measles and typhoid patients, to be disinfected by means of formaldehyde gas, and for this purpose the following rules have been formulated:

(1) All bed linen, body linen, coverlets, etc., are, as hitherto, to be disinfected by steam; likewise mattresses that during the course of the disease have become contaminated, as in the case of children and typhoid cases so often occurs.

(2) If around the bed particles of pus, sputum or the like are found, they are to be removed with cloths, dampened with sublimate solution, and burned.

(3) All objects in the room are to be moved from the wall, pillows, cushions, etc., laid over the backs of chairs or otherwise so placed that the gas has access to all sides; portières and side curtains are to be spread so that the entire surface hangs free.

(4) The windows are to be tightly closed, and the lamp made ready in accordance with the directions.

(5) At the end of twenty-four hours [9] doors and windows are to be opened, dust collected and burned, room aired and again made ready for use.

The advantages which this method has over the hitherto most inconvenient and very laborious procedures, such as rubbing of the walls with bread, washing utensils, furniture and floor with carbolic solution, sterilizing every possible article with steam, etc., are the following:

(1) A much higher guarantee of the surety of superficial disinfection than is obtained by rubbing the walls with moist bread, especially by the washing of the upholstery of furniture with carbolic solutions, since in this case one is entirely dependent upon the reliability of the workmen.

(2) The most disagreeable feature of previous methods, the injury to the wall paper, paint, hangings, etc., and the complete overturning of the contents of the room, is hereby entirely avoided. In our investigations objects of the most varied kinds, such as polished metal, iron, gold, brass, nickel, variously colored silk, fine cloth, leather and patent leather, soft and hard rubber, polished woods, paper, oil-cloths, linen, and mattress coverings, etc., remained absolutely unaffected by exposure to the gas.

[9] Written before the second series of experiments, now twelve hours.

(3) The cost of formaldehyde disinfection should be considerably less expensive than previous procedures, since by the formaldehyde method much less time is required by the workman.

(4) The fumes of formaldehyde are non-poisonous for human beings, when in moderate concentration, so that their penetration through cracks and crevices into neighboring rooms offers no danger to the inhabitants.

In contrast to the long-lasting odor of carbolic acid after disinfection with the same, the odor of formaldehyde disappears in a short time and acts in a high degree as a deodorizer.

For practical purposes it will now be necessary to determine the minimum time to which one may reduce the working of the gas without impairing the surety of the disinfection, inasmuch as it is very difficult often, among the poorer families, to withhold a room from common use for twenty-four hours. We have already begun experiments having this end in view.[10]

After the above experiments were completed it became more and more apparent to me that a shortening of the time of exposure was most desirable and indeed in many cases [11] absolutely imperative. It was necessary to prove, therefore, whether an exposure for a period materially less than twenty-four hours would furnish equally good results. With this end in view the succeeding experiments were instituted:

In accordance with the rule of the intensity of action of almost [12] all known disinfectants — that the degree of germicidal power is in direct ratio to the degree of temperature under which a disinfectant acts — it seemed to me probable that a raising of the temperature of the room to be disinfected might fully compensate for the diminished duration of the exposure. Accordingly a room heated by steam was employed. The method of procedure was the same as that of the experiments above given. Cotton and woollen pieces were infected and after exposure placed separately in tubes of bouillon. In the case of each bacterial form, therefore, the test was in reality repeated. The pieces were also, as before, washed in ammonia solution and then in sterile water before being transferred to the bouillon.

The following bacteria were employed: diphtheria, pneumonia, streptococci, staphylococcus aureus, pyocyaneus. The time of exposure was twelve hours. Two grammes formaldehyde per cubic metre. The temperature of the room upon closure was 21° C.; upon opening 23° C. — an average of 22° C. It may be assumed that the maximum did not exceed this point, as the regulation by steam was constant (Table IV).

TABLE V.

Bacteria.	Result of Control Cultures.	Position of Piece.	Result of Culture in Bouillon, after Exposure.
Anthrax (spores).	Positive profuse growth; 24 hours.	On a table.	Bouillon (both cotton and woollen pieces). Sterile after 2 weeks.
Diphtheria.	" " "	"	" " " "
Pneumonia.	" " "	"	" " " "
Streptococci.	" " "	"	" " " "
Staphylococcus aureus.	" " "	"	" " " "
Pyocyaneus.	" " "	"	" " " "

[10] Since the above was written we have conducted experiments and published results in which we succeeded in reducing the time to twelve and even eight hours with successful result. — A. W. F.

[11] It was found, for instance, in Charlottenburg that, among the poorer classes, it was often impossible to close a room for twenty-four hours unless other quarters were provided for the family during this period.

[12] Jolles has proven that soap solutions are exceptions to this rule. Zeitschrift für Hygiene, Bd. xix, S. 126 u. 138.

Of these tubes two, containing cotton pieces previously infected with diphtheria and staphylococci respectively, were contaminated by "Gelbgrüne Sarcine."[18] Transferred to other culture medium it showed typical growth, no trace of diphtheria or staphylococci, nor did the corresponding tubes containing the woollen pieces show any growth of these forms. They were sterile at the end of two weeks. As seen by the table, all of the other tubes remained sterile.

At the end of three weeks a large portion of the bouillon from the pneumonia and from the pyocyaneus tubes, although showing no growth, was injected into the abdominal cavity of white mice, which are, for these two organisms, sensitive in an extraordinary degree. These mice are alive at the present time, three weeks later, and have at no period shown signs of infection, notwithstanding the fact that the bacteria with which the respective pieces contained in the tubes mentioned were previously infected were obtained from the blood of white mice that had died in a few hours of septicemia caused by these two organisms.

The second experiment was conducted in a similar manner. Time of exposure, eight hours; temperature of room, 20° C. (Table V).

At the end of two weeks a large portion of the anthrax of the pyocyaneus and of the pneumonia bouillon was, as before, injected into white mice, with a like negative result. These mice are at the present time living, and have given no evidence of infection.

These results appear to me to be, from a practical standpoint, exceedingly interesting and satisfactory.

Although the temperature of the room was materially higher during these exposures than the temperature in earlier trials, yet it is possible that equally good results might be obtained in a room without heat (15° C.) even by a short exposure. In winter, however, it would seem advisable, where possible, to warm the room.

I wish to express to Professor Grawitz my appreciation of the kindness with which he has assisted me in the conduct of these experiments and for the constant use of his laboratories and the clinical material of his wards. Thanks are also due Dr. Krekels for continual courtesies and aid during the work.

[18] Gunther, 1895, S. 432.

THE THYROID GLAND AND THE MENOPAUSE.

BY CHAUNCY R. BURR, M.D. (HARV.), PH.B. (YALE),
Assistant Surgeon, United States Navy, Puget Sound Naval Station.

THE following case recently came under the writer's observation. A lady, fifty-six years of age, was said to have had an apoplectic stroke in London, in December, 1898. The catamenia ceased in August, 1897, since which date and up to the advent of the apoplexy various nervous symptoms had been complained of. There were flushings, neuralgias, hysterical attacks, an anesthetic area in the left ulnar nerve — more pronounced at some times than others — a red face, a full and strained look about the eyes. The pulse during this time was always quick, sometimes rapid. The body weight just before the menopause was 185 pounds; a few weeks before the apoplectic stroke it was 177 pounds; nine months after it was 146 pounds. There were also digestive disturbances, constipation, anorexia and "bilious attacks." The heart, lungs, kidneys and uterus were normal.

The apoplexy occurred of an evening. The patient was sitting quietly in her apartment in a London hotel, at peace with herself and the world, when of a sudden she found herself unable to speak. Her lips moved but no articulate speech followed. There was no headache and no mental confusion, and no loss of power save in the muscles of speech. She was got to bed and a physician called. In the morning there was a hemiplegia of the right side. The restoration of function was comparatively rapid and progressive. She first regained control of her right leg, then the right arm, and lastly her powers of speech.

Nine months after this attack, namely, in September, 1899, she again came under my care. What struck me particularly in her appearance was the flushed face, injected eye and general tremulousness. The speech was thick and she was obliged to speak slowly in order to enunciate distinctly. There was a twitching about the right corner of the mouth. The tongue was protruded slightly to the right and the labionasal fold on that side was partially obliterated. She perspired readily, had flushings as of old, and, I was told, had cataracts developing in both eyes. The pulse was full and bounding, though no fever was present, and averaged from 100 to 120 beats per minute. She was markedly emotional and wept frequently during the interview. I observed that she seemed intolerant of any pressure about the neck and frequently attempted to loosen her collar. The grip of the right hand seemed very nearly equal to that of the left and the limp in her gait was almost imperceptible. There was still an anesthetic area over the distribution of the left ulnar nerve, but the sensation in the left hand she declared to be different from that in the right. The latter was numb, but the former felt as if the skin had been soaked in ammonia water.

Physical examination revealed but little. The heart, lungs and kidneys were still negative. Both eyes were somewhat prominent and the lower lids sacculated. There was an abnormal fulness over both lobes of the thyroid gland, and an abnormal tenderness over the external occipital protuberance and the spinous process of the seventh cervical vertebra.

Her principal complaint was of headache, chiefly occipital, and her difficulty in enunciation; also of a rigidity in the posterior muscles of the neck. The headache was worst in the early morning, namely, at about five o'clock, and prevented her from sleeping, though she could not say with certainty that it was the headache which awoke her at that hour. There were also a few minor ills, such as pruritus about the external orifices of the ears and nose, an excess of mucus in the throat, pains in the right shoulder and beneath the right shoulder-blade, and, finally, constipation.

The fulness of the thyroid gland, the prominent eyes, the flushed face and rapid pulse, as well as the progressive loss of flesh, led me to believe that I had a case of exophthalmic goitre to deal with. Moreover, I knew she was also hysterical, and, as such, hyperesthetic to the action of drugs. I prescribed, therefore, two mimims of the tincture of belladonna, morning, noon and night.

I did not see her for a week, but when I did was astonished at her condition. The face-flush had gone; the eyes were no longer prominent; the tremor and twitching about the mouth had disappeared; the speech was slow, but not as thick as before; the tongue was protruded nearly in the median line; the pulse was normal. She still complained of occipital headache, and winced when the spinous process of the seventh cervical vertebra was touched. The belladonna was continued for another week, when she assured me the sense of oppression about the neck had disappeared, and also the pruritus about the nasal and aural orifices. This pruritus was a subjective symptom, as examination of the ears and nose showed nothing to account for it. The thyroid gland could scarcely be palpated. She was rational and composed, and had had no return of her hysterical attacks since the date of the first examination.

The association of an ulnar anesthesia on the left side, with an area of sensitiveness over the seventh cervical vertebra pointed to a lesion at this latter point, either in the bone itself, the cervical portion of the spinal cord, or its meninges. Moreover, this anesthesia antedated the apoplexy by two years. It appeared for the first time soon after the menopause. It was constant and not progressive. There was no redness or heat in the neighborhood of the cervical vertebræ. A bone lesion seemed inadmissible, and the possibility of a cordal or meningeal inflammation at this point was entertained.

To the writer the case was very instructive, and opened up the question whether an over-active thyroid is not in many cases responsible for the nervous phenomena of the climacteric.

That there is some connection between the thyroid gland and the generative organs of both sexes is well known. Thus the thyroid is congested or hyperemic during menstruation, coition, pregnancy, accouchement. Whether this hyperemia results in an increased production of the thyroidal secretion does not appear to have been definitely determined. It does exist in the pathological congestion of the gland observed in infectious diseases, according to Roger and Garnier,[1] and also in exophthalmic goitre, according to Murray.[2] There seems no good reason, therefore, to deny an increase in physiological congestions as well.

The thyroidal congestion of menstruation is relieved upon the appearance of the uterine flow. Young women often complain at such times of a feeling of oppression about the neck, which leads them to seek relief in a tight neck band. Where no flow appears, as at the menopause, this congestion may readily take on a pathological condition owing to long continuance. In such a case, as in exophthalmic goitre, auto-intoxication may be expected. It is scarcely necessary to observe that there are various degrees of auto-intoxication, just as there are various degrees of exophthalmic goitre; but whether in the first degree or in the third degree, there is a marked similarity between the secondary symptoms of thyroidal intoxication and those of the menopause. Thus headaches, neuralgias, paresthesias, flushings, tremors and hysteria are common to both states.

In the case reported the exophthalmic goitre was, in the writer's opinion, the direct result of the long-continued congestion of the thyroid consequent upon the menopause. How far the paresthesia in the distribution of the left ulnar nerve, the hysteria, cataracts and cerebral hemorrhage were due to the exophthalmic goitre now remains to be considered.

Herter mentions [3] a very rare form of pachymeningitis localized in the cervical region, to wit, hypertrophic cervical pachymeningitis. It occurs in late middle life. The earliest symptoms of the disease are due to the irritation of the nerve roots, pains between the shoulders, in the back of the neck and head, slight rigidity of the muscles of the back of the neck, tenderness of the cervical vertebræ to percussion, slight disturbances of sensibility, paresthesias, and more or less symmetrical neuralgic pains, especially in the distribution of the ulnar and median nerves. This definition is sufficiently accurate to fit the case under discussion.

As to the pathology, it appears probable that the disease begins in the pia arachnoid of the cervical region as a small round-cell infiltration associated with arteritis, and arteritis of the spinal cord is thought to be due to the action of irritants in the blood, and particularly to toxins. Why this particular section of the cord should be affected is not clear, but of the clinical fact that toxins in general irritate specifically the spinal cord and the medulla oblongata in particular and, if intense enough in their action, give rise to a condition of hemoglobinemia, there can be no manner of doubt. The symptomatology common to all infectious diseases proves this. Abbott says:[4] There is as yet (1899) little agreement of opinion as to the chemical nature of toxins; but it is probable that the group comprises different bodies of the nature of globulins, nucleo-albumins, peptones, albumoses, and enzymes, or ferments. Ostwald has recently announced [5] that the iodine proteid of the thyroid gland belongs to the class of globulins; that it contains from 1.5 to 1.75 per cent. of iodine and about two per cent. of sulphur, but no phosphorus. Durdufi has isolated from the normal thyroid a substance analogous to cocaine, that is, an alkaloid, so that the toxicity of the thyroid juice seems to be well vouched for. An excess of thyreoglobulin in the circulation is supposed by many to be the exciting cause of exophthalmic goitre, and if globulins are toxic it may well be that the thyreoglobulin was in this case the specific cause of the cervical pachymeningitis and hence of the paresthesia in the distribution of the left ulnar nerve, particularly as the symptom appeared for the first time and soon after the menopause.

As to the dependence of some cases of hysteria on thyreoglobulin poisoning, I can only suggest that such dependence is extremely probable. In the case reported no hysterical symptoms persisted after the subsidence of the thyroidal swelling.

The eyes were examined by a well-known San Francisco oculist, who pronounced the dimness of vision due to double cataracts, still in their incipiency. This dimness of vision was also a post-climacteric symptom, and was doubtless due to the exophthalmos. The intra-ocular pressure was increased, just as in glaucoma, and the lymph circulation of the lens interfered with. It is customary to refer conjunctivitis, conical opacities and the like, which may occur in the course of exophthalmic goitre, to imperfect closure of the lids and to the consequent irritation of substances introduced from without. While not be-

[1] La Presse Méd., April 19, 1899.
[2] Medical News, April 15, 1899.
[3] American System of Practical Medicine, vol. iv, p. 111.
[4] Principles of Bacteriology, p. 494.
[5] Zeitschrift für physiologische Chemie, vol. xxvii, 1899.

littling this source of irritation, I would also suggest that intra-ocular pressure has often quite as much to do with the production of such lesions as the actual introduction of irritants. Gerrish[6] has well said, "that anything which arrests the current dams back the lymph upon the region which the vessel normally drains, unless the fluid can escape by some side channel, and this interference results usually in one or both of two principal changes. The first of these is dilatation of the vessels from the increased pressure of lymph within, and the other is saturation of the tissues on the distal side of the obstruction with lymph, and their consequent hyperplasia from over-nutrition." The deposition of lymph between the lamellæ of the cornea is a prerequisite for the production of an opacity in this structure, and it may well be that the same thing holds for an opacity in the lens.

Whether a cerebral hemorrhage really occurred in this case is not for me to say. The symptoms of a cerebral hemorrhage — at least some of them — were undoubtedly present. In both hysteria and exophthalmic goitre, however, the same symptoms may also occur. In the paralyses of exophthalmic goitre, Joffroy places in the order of frequency, ophthalmoplegia first, then paralysis of the facial muscles, the jaw, tongue and velum palati. In hysterical hemiplegia, according to Sinkler,[7] the face is never paralyzed. The patellar reflex, which is commonly diminished or absent in exophthalmic goitre, was increased in this case, and if anything, more so on the left than on the right side.

In hysteria the patellar reflex is increased in a large proportion of cases. Although hysteria and hemiplegia were both present in this case, the existence of the facial paralysis and that of the tongue and velum palati (for to nothing else can I attribute the peculiar thickness of speech), would seem to argue against the hysteria as the cause of the hemiplegia. The choice lies between a hemiplegia of exophthalmic goitre origin and a cerebral hemorrhage. The suspicious improvement in the movements of the facial muscles, tongue and speech after a two weeks' course of belladonna inclines the writer to the opinion that the cerebral hemorrhage, if it ever existed, must have been extremely small in amount. A series of fly blisters on the nape of the neck greatly relieved the symptoms of irritation at this point.

Clinical Department.

TWO EMERGENCY CASES AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY CHARLES L. SCUDDER, M.D., BOSTON,

Surgeon to Out-patients at the Massachusetts General Hospital; Assistant in Clinical and Operative Surgery, Harvard Medical School.

CASE I. INJURY TO HIP AND ABDOMEN; SUBSEQUENT ACUTE STAPHYLOCOCCUS INFECTION; OSTEOMYELITIS OF ILEUM; OPERATION; DEATH; AUTOPSY.

M. S., five and one-half years old, had had no illness previous to a fall from a fence on a Thursday. The fall was not regarded at the time as serious. An abrasion of the abdomen on the left side and a contusion of the left hip were the only evidences of injury. On Friday he seemed rather indisposed. On Saturday morning he was examined by Dr. Warren Gay, who found the left thigh flexed and the abdomen slightly distended. Tenderness and pain were present in the left groin just above Poupart's ligament. The bowels had moved naturally. There was no tenderness over either kidney. He had vomited once. The temperature was 99.5°; the pulse was 90. He could extend the leg without pain. Examination of the boy Saturday evening found less distention of the abdomen and greater resistance to extension of the thigh. Muscular spasm was very evident about the hip-joint. There was no muscular spasm Saturday morning. Monday morning the abdomen was distended. He was listless; he had vomited once. The leg was extended. The temperature was 100°; the pulse 120. The urine was high in color. He was sent to the hospital.

Monday evening the boy was seen at the hospital. He was found to be delirious at times. He answered questions fairly intelligently. He was restless. The urine was high in color, acid, 1.016. There was a slight trace of albumin. Sugar was absent. A few hyaline and fine granular casts and an occasional blood and renal cell were seen in the sediment — evidently a urine of renal irritation. The leucocytosis was 17,600.

Evidently the boy was suffering from an acute septic infection. The only localizing symptom was the abdominal pain and tenderness in the left side and the persistent flexion of the left thigh and leg, associated with muscular spasm of the left hip muscles.

A median abdominal incision revealed a swelling of the iliacus muscle at its origin from the inner surface of the ilium. This swelling fluctuated distinctly. The abdomen was too much distended and this swelling was too deep to have been detected without operation.

In order to avoid infecting the peritoneum, an extraperitoneal incision, as if for tying the iliac vessels, was made, and the fluctuating swelling was opened and its contents evacuated extraperitoneally. The inner surface of the ilium for a considerable extent was found bare of periosteum. About six ounces of a thick grumous pus was evacuated. The cavity of the abscess was thoroughly cleansed and drained, through the extraperitoneal opening, by gauze wicks.

Two days later the boy died. From the time of the operation till he died there was no material change in his condition. High temperature, delirium and failing pulse were the physical signs. The infection was intense. Six days from the injury the boy was dead.

Abstract from the autopsy records of the Pathological Laboratory of the Massachusetts General Hospital; autopsy by Dr. J. H. Wright, six hours post mortem:

Anatomical diagnosis. — Purulent infiltration and abscess formation in the tissues adjoining the left iliac bone; acute osteomyelitis of the left iliac bone, purulent arthritis of the left hip; incipient acute general peritonitis; hemorrhagic infarction and acute fibrinous pleurisy of the left lung.

Dissection of the parts adjacent to the wound in the left side of the trunk shows the following conditions: The cavity of the wound and abscess extends downward between the anterior surface of the iliac bone and the muscles in the fossa of the bone. Here the periosteum is separated and the periosteum is denuded,

[6] Treatise on Surgery, Park, vol. i, p. 320.
[7] System of Practical Medicine, Loomis, vol. iv, p. 699.

but is not necrotic. In their place there is an accumulation of thick, dirty yellow pus. There is some purulent infiltration of the tissues near the bone, just below the line of the pelvis. The gluteal and other muscles just posterior and external to the iliac bone are infiltrated with thick, dirty yellow pus, which exudes from the cut surfaces in abundance. The iliac bone on being broken open shows in places yellow pus in the interior of its spongy bone. The left hip-joint on being opened exudes a considerable quantity of thick, dirty, grayish-yellow purulent fluid. No definite lesion of the cartilages was made out. No disease of the spinal column was found. No disease was found in the portion of the sacrum adjacent to the left ilium.

Bacteriological examination. — Cover-glass examination of the pus of the left hip-joint shows pus and cocci. The pus cells are generally necrotic; cocci are numerous; cultures in blood serum, right lung, confluent growth of small colonies of a yellow color; staphylococcus pyogenes aureus. The exudate from the peritoneal cavity, liver, spleen, and the pus from the region of the left iliac bone, all show numerous colonies of staphylococcus pyogenes aureus.

REMARKS.

The sequence of a comparatively slight trauma and an acute infective process is extremely interesting. It was impossible to determine the exact origin of the primary infection. The osteomyelitis appeared to be secondary to the process elsewhere present — to have extended from other parts. Until the involvement of the hip-joint and the associated muscular spasm, it was impossible to locate accurately the lesions. The inclination to lie with the left thigh flexed was suggestive of a left-sided lesion seated within the psoas or iliacus muscle or within the hip-joint. In the absence of early muscular spasm, primary disease of the hip-joint could be ruled out, and some obscure lesion near the left psoas or left iliacus muscles was thought to exist. The muscular spasm which appeared later suggested that any difficulty in the hip was secondary. The autopsy demonstrated this to be true.

CASE II. EXTRA-UTERINE PREGNANCY; RUPTURE OF SAC; OPERATION; RECOVERY.

J. O., thirty-five years old, married ten months. Last catamenial period was eight weeks ago, lasting three days. Ordinarily catamenial period lasts four or five days; ten napkins a day. Some nausea and loss of appetite seven weeks ago. To-day when patient was first seen she told the following story: At eight o'clock this morning she was seized with sudden agonizing pain in the median line of the abdomen, above the pubes. She was working about the house at the time, but on reaching a sofa she fainted. On recovery from the initial faint the pain had become general in the abdomen and she was unable to sit up. The pain persisted in the abdomen, but extended upward away from its first seat to the epigastrium, the right shoulder and the right side of the chest. She had through the day a few fainting spells.

Upon entrance to the hospital her temperature was 99.8° F.; pulse 100 and of fair strength; respiration 42; leucocytosis 28,000. She presented an anxious expression of countenance, with pallor of lips and rapid respiration. The abdomen was slightly distended uniformly. A mass was felt in the hypogastric region which was firm and slightly sensitive. The bladder was empty. In either groin there was tenderness to deep pressure. Dulness existed in each flank and suprapubically. Vaginal examination discovered the uterus pushed forward and crowded downward. The os was patent and slightly soft. In the left cul-de-sac was a fulness which was tender to the palpating finger. The history of a sudden onset of pain during pregnancy, associated with repeated fainting attacks, the pallor, the rapid respiration, the dulness in the flanks, suggested an extra-uterine pregnancy which had ruptured, partially filling the abdominal cavity with free blood.

Operation found a ruptured tubal pregnancy on the left side. The quantity of blood present in the abdomen was not measured. The tube was tied off, the abdomen sponged out with dry gauze sponges, and the abdominal wound closed with sutures of silkworm-gut.

During convalescence the temperature rose once to 100.5° and then slowly came to normal.

In the after care of this case no nourishment was given for twenty-four hours. During these first twenty-four hours sips of hot water were given to relieve thirst. There was a little abdominal distention during the first few days, which was relieved by the use of enemata of suds placed with the aid of a rubber catheter high in the colon. Broths were allowed on the second day; broth and milk on the third day; liquids and soft solids by the end of the week; house diet after the first week. The bowels were moved by enemata every other day. The patient left the hospital after seven weeks, wearing a snugly-fitting abdominal swathe. She will wear this swathe for about two months.

THE CLINICAL MANIFESTATION OF A PHYSIOLOGICAL FACT.[1]

BY WILLIAM H. ROBEY, JR., M.D., BOSTON.

This brief paper is presented because the physiological fact mentioned does not seem to be generally appreciated, no clinician whom I have questioned being able to tell whether the sign was pathological or not. The matter came to my notice in the following manner: A man brought his four-year-old child to the out-patient clinic for examination. He said that the child was sitting on the kitchen table about seven o'clock the previous evening when he suddenly fell, having apparently lost his balance, struck his head on the floor and became unconscious; he vomited at the time and had been dull and stupid ever since. The father held in his arms a pale, limp, unconscious child. The history, as given by the parent, suggested some cerebral condition, and with that in mind we first examined the eyes, and found that the pupils were contracted to pinhole size, equal, and unaffected by light. Then the patellar reflexes were tried and proved to be normal, but in tapping the knee the child regained consciousness, sat up and looked around; the pupils instantly dilated to their normal size and we found, to our surprise, that a healthy, sleeping child had merely been wakened. The man had not made it clear to us that the child had eaten his breakfast and that he had brought him to the hos-

[1] Read before the Clinical Club, November 17, 1899.

pital because he feared some possible obscure injury as the result of the blow.

Only a few days ago I saw another child, whose parents gave almost the same history of a fall. He was apparently asleep at the time of the examination and the pupils were contracted to pinhole size. In this case the reflexes were tried and the child was completely examined without waking him. When he was wakened the pupils instantly dilated.

Since the first experience I have examined 22 normal sleeping children: in all the pupils have been pinhole and have dilated instantly on waking. In several instances the children were examined and handled exactly as if they had been awake without arousing them. For obvious reasons the eyes of children have been examined. In children who have been pinched and stirred up without regaining consciousness the pupils have partially dilated under the sensory stimulation.

In the 1878 edition of his "Physiology" Foster says: "The pupil is contracted when we accommodate for near objects, when the retina is stimulated, as when light falls on the retina, the brighter the light the greater the contraction. The pupil is also contracted when the eyeball is turned inwards, when the aqueous humor is deficient, in the early stages of poisoning by chloroform, alcohol, etc., and in nearly all stages of poisoning by morphia, calabar bean and some other drugs." In the 1880 edition he mentions all of these causes and adds, "in deep slumber."

The twelfth edition of Kirke's "Hand-Book of Physiology" (1888) mentions all of the above causes save deep slumber. The "American Text-Book of Physiology" says: "In sleep, though the eyes are protected from light, the pupils are strongly contracted, but dilate on stimulation of the sensory nerves, even though the stimulation be insufficient to rouse the sleeper."

The drugs which cause contraction of the pupils are physostigmine, nicotine and pilocarpine, by action locally or through the circulation; cocaine locally causes transient contraction, which is followed by wide dilatation; conine applied locally contracts through conjunctival irritation, but the drug has gone out of use. The most important drugs which cause contraction of the pupil are opium and alcohol, the latter less marked than the former.

The cerebral diseases with uniformly contracted pupils are few and the contraction is not a constant symptom. Myosis occurs in syncope. In the unconscious state caused by a blow, with symptoms of shock producing a condition sometimes spoken of as "concussion," the pupils usually react to light.

When an adult is handled incident to examination, if he is merely sleeping the manipulation will waken him, but fatigued children sleep soundly and are sometimes aroused only after considerable effort, but, once awake, they generally remain so, differing from the drowsy child whose pupils are contracted by some drug. It seems to me to be of some importance to remember the fact that the pupils are strongly contracted during sleep and that they are instantly dilate on regaining consciousness from healthy slumber.

ANOTHER PLAGUE VICTIM. — It is reported that Dr. Vital Brazil, a bacteriologist of S. Paulo, has contracted plague while attending patients in the hospital at Santos.

Medical Progress.

REPORT ON DISEASES IN CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WENTWORTH, M.D., BOSTON.

AFFECTIONS OF THE CENTRAL NERVOUS SYSTEM IN ACUTE INFECTIOUS DISEASES.

E. FRÄNKEL[1] reports four cases, three of which were infants.

The first case was that of a male infant of ten months, who was brought to the hospital with influenza and bronchitis. Eight days later he developed a fetid diarrhea, and died two weeks later without any other noticeable symptoms. The temperature during the first eight days was somewhat elevated, and varied from 38.5° to 40° C. With the onset of the diarrhea the temperature fell and remained below normal for several days preceding his death.

At the autopsy the chief lesion consisted of a purulent meningitis which involved the anterior portion of both hemispheres. The exudaton infiltrated the piarachnoid and caused some flattening of the convolutions beneath. A similar purulent exudation was found at the base of the brain on the frontal lobes. The ventricles were somewhat distended with fluid and contained flakes of pus and fibrin. The ears were normal. Bacteriological examination showed the presence of the influenza bacillus in pure culture in the exudation. Cultures were made in agar mixed with blood.

The striking feature of the case, clinically, was that the meningitis was absolutely latent, so that no suspicions were entertained of a cerebral complication during life. The localization in the frontal lobes led the writer to believe that the infection took place from the nasal cavity through the lymphatics.

The second case was that of an infant of nine months, who entered the hospital with symptoms of bronchitis and enteritis, and who died fifteen days later with symptoms of tubercular meningitis.

At the autopsy a purulent meningitis was found covering the convexities, and also, to some extent, the base of the brain. The ventricles were distended with cloudy fluid. In this case the pneumococcus was found in the exudation. There was a double otitis media, but no connection could be found between it and the meningeal exudation.

The third case was that of a child of two years, who succumbed to an operation for empyema following pneumonia.

At the autopsy, in addition to the pulmonary lesions, there was a hemorrhage over the second right frontal lobe, which penetrated into the medullary substance of the brain. A similar hemorrhage was found in the region of the gyrus paracentralis. The meninges over the cerebellum contained a small quantity of purulent exudation, in which was found the diplococcus lanceolatus. In this case there were no clinical symptoms of the cerebral complication.

ARSENIC IN THE TREATMENT OF CHRONIC ECZEMA IN INFANCY AND CHILDHOOD.

J. Neuberger[2] has obtained excellent results in the treatment of rebellious cases of eczema by giving

[1] Zeitschr. f. Hyg. u. Infectionskrankh., Bd. xxvii, p. 315, 1898; Rev. Mens. des Maladies de l'Enfance, April, 1899, p. 167.
[2] Arch. f. Derm. u. Syph., Bd. xlvii, S. 195; Rev. Mens. des Maladies de l'Enfance, Tome lxvii, 1899, p. 381.

arsenic internally. (This treatment has also been employed systematically by Anderson and Lewis). Neuberger's cases ranged from four months to five years of age. There were 30 such cases in all, and the ordinary methods of treatment had proved useless. In some cases the lesions were confined to the cheeks, forehead, ears and scalp. In others the eruption was general. In many cases the affected portions were covered with thick crusts; the skin was edematous in places, and pressure on the crusts caused pus to exude. The neighboring lymph nodes were enlarged and in some cases suppurating. There were a number of cases of so-called "scrofulous" type of eczema with lesions about the nose and lips, and associated with lesions of the middle ear, nose and eyes.

The treatment consisted solely in the administration of Fowler's solution. For children over two years of age, Neuberger employed equal parts of Fowler's solution and distilled water, and began with one drop once a day, at noon, and increased the quantity by one drop each week until six or seven drops were given. The treatment was discontinued gradually as soon as recovery occurred. For infants, 1.5 grammes of Fowler's solution was mixed with 3.5 grammes of distilled water and given in the same way up to five drops.

Only one case showed any ill effects from the treatment. This was an infant, one year old, with a particularly obstinate form of eczema, who showed symptoms of gastro-enteric disturbance after a long period of treatment.

The duration of the treatment was relatively long. During the first two weeks no improvement was noticed. It was only after three or even five weeks that a noticeable diminution of the itching occurred. Soon after this the improvement in the skin was evident. By the sixth or eighth week the improvement was rapid in most cases. Recurrence of the eczema took place at times and necessitated a repetition of the treatment.

OBSERVATIONS ON GASTRIC DIGESTION IN INFANCY.

Investigations of the motor and secretory functions of the stomach in infants have been so contradictory that Wolf and Friedjung[3] were led to control the previous observations by further investigation. The experiments were made upon 97 infants from ten days to twenty-one months old. They were chiefly cases of gastro-enteric disturbance; only a few were normal so far as their digestions were concerned. The gastric contents were examined by all the modern methods. The results were as follows: The quantity of the gastric ferments secreted by infants is subject to much greater variation than in older children. In some cases the complete absence at times may be regarded as physiological. This explains the variable results obtained by different observers.

This variability in the quantity of the gastric ferments leads Wolf and Friedjung to conclude that the ferments are by no means so important factors in the assimilation of the food as has been hitherto believed. Accurate conclusions as to the activity of the gastric digestion cannot be made by merely estimating the presence or absence of the so-called "normal" secretions in the stomachs of infants. This explains why observers have failed to find characteristic changes in the gastric secretions in cases of digestive disturbance in infants.

Evidence of diminished motility and the persistence of lactic-acid fermentation and perhaps transient fat acids in the stomach for some time after normal digestion should have been completed are the only certain evidences of a pathological condition. Indications for the appropriate treatment of digestive disturbances cannot be obtained from the mere examination of the contents of the stomach.

[3] Arch. f. Kinderheilk., Bd. xxv, S. 161; Centralbl. für die med. Wissenschaften, No. 36, S. 622, 1899.

PROTECTIVE SUBSTANCES IN THE BLOOD OF NEW-BORN INFANTS.

Rudolf Fisch[4] studied the action of the blood serum of new-born infants upon certain infectious agents, to determine whether the blood serum possessed any power to modify the predisposition of infants to certain infectious diseases. The results of his studies on the action of blood serum upon infections and intoxications produced by the diphtheria bacillus are as follows:

(1) The blood serum of the new-born has no appreciable bactericidal action on the diphtheria bacillus. Cultures of the bacillus in this serum showed no loss of virulence.

(2) A protective influence of the blood serum was observed in most cases when corresponding quantities of serum and virulent *cultures* of the diphtheria bacillus were injected into guinea-pigs.

(3) The protective power of the serum was rarely sufficient to prevent the death of the animal when quantitatively similar amounts of *toxin* and serum were injected into different parts of the animal.

(4) It was usually possible by injecting sufficiently large quantities of serum, to protect guinea-pigs from diphtheria intoxication.

The protective substance in the blood of the new-born exerts an antitoxic action on the diphtheria toxin.

BACTERIOLOGICAL EXAMINATION OF THE BLOOD AND URINE IN CERTAIN INFECTIOUS DISEASES OF CHILDHOOD.

Most of the work of Carlo Giarré and Carlo Comba[5] was done in cases of diphtheria, measles and scarlet fever. The blood was obtained during life from the veins on the backs of the hands. In 59 cases in which the blood was obtained in the above manner, and from which 150 cultures were made, the typhoid bacillus was found once. The other cultures remained sterile. The bacteriological examination of the blood obtained post mortem differed considerably from that obtained during life. The authors ascribe these differences to post-mortem causes. The blood was obtained as soon as possible after death, by aspiration from the unopened heart. In 57 cases Fränkel's diplococcus was found six times; the streptococcus pyogenes 11 times, and the staphylococcus aureus twice. Neither the colon bacillus nor other pathogenic organisms were found. A striking result was the frequency with which the streptococcus pyogenes was found in the blood of children who had died of scarlet fever. Not less striking was the fact that in 20 fatal cases of diphtheria the diphtheria bacillus was not found in the blood post mortem. The urine was obtained by cathet-

[4] Jahrbuch f. Kinderheilk., Bd. xli; Archiv f. Kinderheilk., Bd. xxvi, S. 439, 1899.

[5] Arch. ital. di clinical. med., xxxvi: Arch. f. Kinderheilk., Bd. xxvi, S. 450, 1899.

erization in 29 cases. No pathogenic organisms were found in any of these cases. In nine of the cases the cultures remained sterile, and in 20 cases a variety of non-pathogenic organisms was found.

The examination of the blood and urine obtained during life and of the blood obtained after death in 20 cases of diphtheria failed to show the diphtheria bacillus in a single case. The authors therefore agree with Roux and Yersin in concluding that diphtheria is a local infection and that the later symptoms are due to intoxication.

The examination of the blood and urine from cases of measles gave negative results. The writers failed to find in any stage of the disease the bacillus described by Canon and Pielicke.

The blood examinations made during life in cases of scarlet fever were negative. The streptococcus pyogenes was found frequently in the blood of these cases immediately after death, whereas in death from other diseases this was not the case. It would seem from this that the streptococcus may be of importance in scarlet fever in connection with complications.

EXPERIMENTAL STUDIES ON THE ACTION OF ANTIPYRIN AND LACTOPHENIN ON CHILDREN.

Pasquale Fazio [6] reaches the following conclusions:

(1) Both antipyrin and lactophenin cause a reduction of temperature in children who have a normal temperature. The degree of reduction may amount to 2.2° C. from the use of antipyrin and 1.9° C. from lactophenin.

(2) Moderate doses of lactophenin will produce a rapid and sure reduction of temperature in these cases. Larger doses of antipyrin are required for this result and the effect is not so certain. At times it causes a rise in temperature in these cases.

(3) The action of both drugs lasts about six hours, when the doses are repeated; the temperature then rises again without any evidences of subjective symptoms.

(4) A corresponding influence was exerted upon the pulse and respiration.

(5) Symptoms of collapse are produced when antipyrin is given in sufficient quantities to produce a marked fall in temperature. A similar result occurs after the administration of lactophenin, but only when more of the drug is given than is required to reduce the temperature.

(6) The clinical phenomena of intolerance to antipyrin and lactophenin are, general depression, weakness, small and frequent pulse, diminished intensity of the heart sounds, especially of the first sound over the mitral area, increased frequency of respiration, pallor, sweating, drowsiness, apathy, mydriasis, loss of appetite. Nausea and vomiting did not occur. In several cases transitory albuminuria and hemoglobinuria occurred after giving lactophenin.

(7) The maximum dose for lactophenin is 0.1 to 0.4 gramme in the first months of life, and at the most 0.8 gramme at the end of the first year. Somewhat larger doses of antipyrin are permissible.

(8) In general antipyrin is the better analgesic and anesthetic, and lactophenin is the better antipyretic.

(9) In certain cases of bronchial catarrh associated with cough the cough appeared to be somewhat relieved by both drugs.

[6] La Pediatria, May, 1898; Arch. f. Kinderheilk., Bd. xxvii, S. 145, 1899.

It is evident from the foregoing that both of these drugs have dangerous properties when used as antipyretics and that they must be administered with caution if at all. Antipyrin exerts its toxic action more on the nervous system and the heart, and lactophenin on the blood. [It is uncertain from the abstract whether the maximum quantity alluded to refers to a single dose or to the twenty-four-hour amount. If the former, it appears to us to be much too large a quantity to give to an infant at one time. — REP.]

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

REGULAR meeting Monday, October 23, 1899, DR. R. H. FITZ in the chair.

ANATOMICAL SPECIMENS.

DR. BEACH: I have here a specimen from the tumor of a testicle removed this morning. It has been simply divided. The patient was fifty-two years old, the growth appearing three or four years ago with little pain. It presents the gross appearances of sarcoma or carcinoma of the testicle. A section has been removed for microscopic examination, but no return has been made as yet. There are no cysts and no cartilaginous masses, such as are sometimes seen in sarcomatous growths. After the section had been made below the external ring and the ligature applied, I opened the inguinal canal by dividing the external oblique muscle up to the internal ring, dissected the spermatic cord from the canal to the internal ring, where it was divided. On examination of the cord after it was removed, a small gland of the size of a filbert was found in its substance. The tumor developed without much pain, the man being able to attend to his work throughout the time. It weighed 1,220 grammes and measured 18 x 12 centimetres.

DR. CHARLES HARRINGTON read a paper on

DISINFECTION AND PREVENTION IN THE SICK-ROOM. [1]

DR. DURGIN: I have not many remarks to make. I am very glad to hear the paper. It touches on many points of interest to the profession and to the public. First, in regard to isolation. The reader has not depicted too much the difficulties in securing the isolation of these patients. In most instances it is utterly impossible to keep the patient in such segregation as is necessary. It is impossible to keep the family out of the room or prevent such commingling with the family, and even with parties out of the family, as would be necessary to secure proper isolation. In many instances there is very little care bestowed by the family until driven to do so. It is difficult for the attending physician, difficult for the nurse, and it is difficult for the health officer to secure this isolation. It is true, as has been said by the reader, that the ordinary measures proposed and instituted for closing off the sick-room amount to little or nothing. And I think too much upon this point

[1] See page 617 of the Journal.

cannot be said in societies like this; it cannot be too much talked over by physicians. Practically, we find it necessary to take more than 50 per cent. of these patients away to the hospital, many of them by force, in order to secure isolation. I believe that no one has the right to so use his own as to injure his neighbor. I believe that wherever a child or person is sick in a tenement or house, and is not so isolated that all the other children may go to school without risk, then that patient should go to the hospital and the home be cleaned up. We are pursuing the subject upon that line, and wherever our agents report to us that a child is not satisfactorily isolated we give an order for the removal of that patient to the hospital.

As to the disinfection, I think that the writer has given a good illustration of the fallacies which are encountered in the sick-room. Very many people, I should say the majority of families, believe in these worthless patent disinfectants. You find them everywhere, and, in most instances, great confidence is placed in them. A slight odor of carbolic acid gives most people a sense of security, and we have no disinfectant, in my knowledge, where deception is so easily practised as with carbolic acid, because of the fact that a small particle of it gives the odor which lulls the people into a sense of security. There are very few disinfectants which we should regard as trustworthy and which can be used freely, as they must be, without very great cost. First, I should say that steam stands perhaps at the head of our efficient disinfecting agents. It has the power to kill quickly and to penetrate. The formaldehyde gas is a remarkably quick and efficient disinfectant, but it has not the penetrating power that steam has. In a one-per-cent. solution it is capable of doing very excellent and rapid work. The chloride of lime in solutions furnishes one of our cheapest and most efficient known disinfectants; it is rapid and sure in its effect. I think, with the typhoid stools and many other infected materials, it is one of the most convenient and useful disinfectants. It is common to order or advise a jug of this solution, half a pound to the gallon of water, well corked to save the chlorine until it is brought into use. I should say that chloride of lime is comparatively worthless unless it is kept in a dry and fresh state, containing something like 30 per cent. to 33 per cent. of chlorine. I scarcely think we need fear its use on the plumbing materials in the dilute form recommended.

The bichloride of mercury should not be forgotten for general use. Of course it is a poison which should be handled with care. A drachm to the gallon, giving about 1-to-1,000 strength, with an equal part of common salt or a trifle of hydrochloric acid, gives an acid solution which will not lock up the bacilli in albumin. One to 1,000 makes a good disinfectant on all hard surfaces, and it is well to use this upon furniture, carpets, etc., wherever a damp cloth can be used without injury.

Dr. McCollom: I have very little to add. I was very much interested in what Dr. Harrington said about formalin. About the time Dr. Harrington was making his experiments, I made quite a number with the same agent. I think that it makes comparatively little difference how the formalin gas is generated, whether you use pastilles prepared by Schering or evaporate the solution. At the outset I took cultures from cases of diphtheria, diphtheritic membrane, also pure cultures of the typhoid-fever bacillus, and quite a number of cultures of the various cocci, and exposed them to the fumes of formalin for eighteen hours or over night. I found in every case in my first series of experiments that the organisms were killed, that in the diphtheritic membrane the organisms were entirely destroyed; and let me remark in passing that before I commenced, before these articles were exposed to the fumes of formalin, cultures were taken from every one of them, and the organisms were found in each of the individual cultures. The cultures were on pieces of cloth; tongue depressors were used for the diphtheritic membrane; everything was exposed. Then I thought I would see if formalin had any penetrating power; therefore I took discharges of nasal diphtheria, spread cultures of diphtheria bacilli on pieces of cloth, put them in the pockets of a coat and rolled the coat up, not tightly, exposed it to the fumes of formalin, and whereas before the cultures had been entirely killed, in the second instance, where the cultures were in the pockets of the coat, the formalin had no action at all, showing conclusively that for a surface disinfectant formalin is a very good agent, but where you wish any penetrating power it is absolutely worthless; therefore you have to resort to steam where penetrating power is desired. I am rather amazed at the statement made in some of the pamphlets written on formalin that it was not injurious to animal life. In my series of experiments, in the first instance, a rabbit was killed in an hour; in the second, in thirty minutes. In the second instance perhaps there was a little more formalin in the room than in the first.

In regard to corrosive sublimate, I use that a great deal in the isolating-rooms. It is our practice, if a patient comes with a doubtful diagnosis or without any diagnosis, for instance, if the patient has been exposed to scarlet fever, one member of a family having been admitted with scarlet fever and another complaining of the initial symptoms, the second patient is placed in isolation, and when a positive diagnosis is made, transferred to the ward. The walls, ceiling and floor of the isolating-room are washed with corrosive sublimate, 1 to 500; after that they receive another washing with clear water, and are aired very thoroughly for from twenty-four to forty-eight hours. In no single instance — and yesterday the ten thousandth patient was admitted to the hospital — have we had anything contracted from the isolating-rooms.

Dr. Harrington alludes to the effect of sunlight as a disinfectant. There is no question that sunlight is one of the most efficient disinfectants. The experiments of quite a number of German observers show conclusively that the various organisms are destroyed by exposure to sunlight, and in a few instances I have experimented on that line myself, and I find that if you expose a test-tube, having previously inoculated it to the sunlight for two consecutive days, no organisms will grow.

When a patient is discharged, the bedding is placed in the formalin room over night and then thoroughly aired. All the patient's clothing is disinfected by formalin and since we have been disinfected by this agent, we have not heard of a single instance where there was any proof that the patient carried anything in his clothing; at all events, we have had a good deal less fault-finding than when we disinfected the clothing with steam.

Dr. Harrington does not lay quite stress enough upon the disinfecting properties of boiling water. I think in every case the clothing from a person ill with an infectious disease should be boiled at least an hour, and when I say boiled an hour, I mean not simply put into hot water and the water allowed to come to the boiling point, but absolutely boiled that time. The Empire Laundry Company have a very ingenious and satisfactory washing-machine which is really a steam sterilizer on a small scale. You cannot sterilize by steam before washing the clothes, for if you do you get indelible stains. If you wash your clothing first and then turn on superheated steam, as can be done by this machine, you can disinfect and disinfect absolutely. As a matter of fact, we boil our clothes at the hospital about an hour, and I know of no instance where there has been any cross infection since the hospital has been opened. I exclude cases where patients come in with diphtheria and in four or five days break out with an eruption of scarlet fever contracted outside the hospital. There has been no instance of cross infection from the clothing and I attribute it to the fact that I insist on the clothing being boiled an hour. Dr. Russell, of Glasgow, adopts that method, and in an article he wrote some time ago, he speaks of the good effect of boiling as a matter of disinfection. In addition, I wish Dr. Harrington had laid a little more stress upon fresh air. Fresh air and sunlight are nature's best disinfectants. I think in the country a good deal can be accomplished by impressing upon the minds of the people the importance of the effect of sunlight and fresh air as a disinfectant.

DR. SHEA: I am sorry Dr. Harrington looks so discouragingly on the difficulty of isolation as practised the present day. As a health officer, and dealing especially with scarlet fever and diphtheria every day in the week, I find that great improvement has taken place in the last four years and especially since the opening of the South Department. Up to that time the Health Department of Boston was handicapped. We could not isolate the children. When you have two cases of diphtheria or three cases of scarlet fever in a tenement of three rooms, and no place to send them, isolation is impossible, but with the opening of the South Department and the facilities furnished there, naturally the Health Department started in a new groove, and I think probably it might interest the gentlemen of this Society if I should tell them briefly the workings of the Health Department of our own city. As to the question of isolation, you are aware that the Health Department of any city is obliged under the law to maintain a supervision over any patient afflicted with a contagious disease, and after the death or recovery of the patient to see that there is proper disinfection. When a case is reported, notice is immediately sent to one of our agents; the city is divided into fifty districts, and this agent is a medical man representing the Board of Health in that particular locality. He makes a visit to the patient and generally in conference with the attending physician; if the patient can be properly isolated he is allowed to stay at home.

Now what do we as health officials consider proper isolation? As interpreted by the Health Department and what they always insist upon, isolation means the complete separation of the patient from the immediate family, a particular room for the patient. It also means that no one is allowed in that room with the exception of the nurse, not necessarily a trained nurse, and the attending physician. We have rules and regulations to cover this particular isolation. The legal method of performing this is to placard the door leading to the apartment with a card, red for scarlet fever, white for diphtheria, stating that the room is quarantined by the Health Department of the city of Boston. I find that these agents co-operate with the physicians in charge of the case and the patient is isolated. The agent maintains the supervision over this case, and when the patient is ready for discharge after diphtheria two successive negative cultures must be obtained, the last one by the agent, and in case of scarlet fever when the physician certifies that the patient has recovered, this agent must again make a visit to examine the case and certify that the patient is free from infection. That is the way we are handling these cases at the present day. I think that the members of the profession, especially the younger members that deal with these cases of infection, like scarlet fever and diphtheria, can see themselves the great improvement that has taken place in Boston. I myself can testify to that fact. Heretofore it was not an uncommon occurrence to find children on the street suffering with scarlet fever desquamating, and also with diphtheria. That to-day is a rare occurrence.

As regards the practical workings of disinfection. We have a corps of men trained for that duty. On receipt of notice that the apartment used by the patient is ready for disinfection, they proceed as soon as possible to the house and prepare that room for disinfection. As the reader and Dr. McCollom have said, the formalin is merely a surface disinfectant, and that is one of the objects of preparing the room, all bedclothing, sheets, pillow-cases, in fact everything that can be brought to the surface, the object being to allow the gas to play on the surface, the room, the windows, doors, flues, ventilators, everything being sealed up. The object is to make it air-tight as possible and to prevent any leakage of gas. We use at the present time about 20 ounces to every 1,000 cubic feet. The gas is allowed to remain about six hours and after that the apartment is opened and ventilated. We are very liberal in disinfecting. If there is any question of infection of the other rooms before the patient has been placed in quarantine, we cheerfully perform disinfection for the whole. That is in brief what the Health Department is doing in Boston to-day. What we have accomplished I suppose results must show for themselves.

DR. HILL: In common with every one else here, I am sorry to know of Dr. Harrington's illness. I regret his absence to-night also, because I should like to ask him a few questions relating to this paper. One statement in particular that rather puzzles me is that of the precipitation of albumin by bichloride of mercury. This point, overlooked entirely in the early stages after bichloride first came in and while it was looked upon as a quite marvelous disinfectant, was brought to light, I think, first by Klein, and this reputation has stuck to bichloride of mercury ever since, although numbers of authorities have pointed out repeatedly that various salts and acids added to the solution will prevent that precipitation of albumin which is the chief fault of the bichloride. I was a little surprised to hear that point come up again at this late day without any mention of the action of salts or acids, and should have liked to ask Dr. Harrington if the action

of acids and salts in preventing precipitation of albumin has been exploded, especially as I am myself rather a bacteriologist than a chemist.

With regard to bichloride as compared with formalin, and chloride of lime as compared with formalin, the great point to remember, I think, about all disinfectants is that there are a large number of them that will work excellently well, and the particular disinfectant chosen does not make so much difference, so far as sanitary matters go, as the thorough, exhaustive, intelligent application of whatever disinfectant is selected. Of course there are a great many points about different disinfectants that have been carefully worked out. It is too large a subject for this discussion to go into the applicability and scope of each particular one, but so far as the poisonous effect of bichloride is an objection to it, it must be remembered that that applies particularly to bichloride in the form of powder and not so much in 1-to-1,000 solution, although I admit that this is poisonous, but the great danger comes in the concentrated form and the same danger applies to formalin. You would as little think of placing in the hands of an ignorant person formalin in full strength as of putting in his hands the bichloride in powder form. When both are diluted in the ordinary proportions, there is little to choose from the standpoint of safety.

With regard to chloride of lime, I think perhaps some of the objections which chloride of lime has are overruled by turning rather to the analagous disinfectant, chlorinated soda, which does not precipitate albumins as chloride of lime does, and does not precipitate fats or soaps and, in that way, form more or less curdy masses on the interior of vessels in which it is placed with the material to be disinfected. Chlorinated soda, however, has some objections. It is a little more expensive than chloride of lime — and expense is a very great factor indeed in dealing with disinfection among the poorer classes, where it is usually most needed — and also it is not as stable; at the same time, the instability of both solutions I think has been somewhat exaggerated. In experiments I have conducted I have found unstoppered solutions of one per cent. of chloride of lime maintained their strength, or practically so, for two weeks; the loss was very small. The odor of chloride of lime has been brought up as an objection, and there, again, I think that, as compared with formalin, you must distinguish between the concentrated forms of both, which are certainly disagreeable, and the diluted forms of both, which are equally innocuous. Of course, a one-per-cent. solution of chloride of lime has a slightly disagreeable odor, preferable, however, to the ordinary smells of a tenement, certainly to those of a tenement sick-room.

With regard to the paper as a whole, I can only express my deep feeling of pleasure at hearing it and finding so many of the points admirably brought out.

Dr. C. F. Folsom: I think the rules which have been laid down can be pretty well applied to private houses and, so far as I know, they are so applied and, I think, applied pretty efficiently. Among the tenement-house quarter of the city I think, probably, the details of disinfection are carried out in this city more thoroughly than in any other place in this country, and perhaps better in many respects than anywhere else. There are measures which I have seen elsewhere that, it has seemed to me, might be applied with very great benefit here, and that is the disposal of the family. If you go into the tenement-house district and find a single case of diphtheria, or possibly two cases in a family, the chances are that by the the time they are seen every room occupied by the family has been infected and every member of the family exposed to the contagion and a great many articles in various rooms exposed. That certainly would apply to a very large proportion of the cases. There has been for twenty years in Glasgow a practice to meet that condition with exceedingly satisfactory results, and they think they have demonstrated that scarlet fever and diphtheria, particularly, have been very much diminished since they have gone into effect. I suppose it would be fair to say, however, that they take a much more liberal view of infectious diseases than we do, both in private families and tenement-house districts. They think that a great number of cases of typhoid fever, for instance, are conveyed by personal contact, articles of food being infected from the fingers, the fingers being infected and articles of food, cups, mugs, etc.; and typhoid fever is subjected to the same isolation by being sent to the isolating hospitals that scarlet fever and diphtheria are. They have a number of houses which are isolated and which are furnished and ready for occupation at any time, and when a child, or perhaps two children, are sent to the hospital with an infectious disease the whole family is bundled out of the tenement and put into one of these houses and kept there for a week or two for observation, and until the tenement which they occupy can be completely cleansed and all the articles of clothing completely disinfected. After that is done — I think the period is usually two weeks — the family is allowed to go back, and the tenement which they have been occupying temporarily is disinfected and ready for another family to come in.

In regard to the particular point of the application of these rules to private houses, I really do not see anything that is to be added by way of discussion to what has been said, because, it seems to me, the general principles which have been so admirably laid down can be made to apply pretty well to private houses, as well as they can to hospitals. Possibly there is some other gentleman who can give us further information on this point.

Dr. Beach: I should like to ask if they have given up the use of sulphur as a disinfectant at the South Department.

Dr. McCollom: We never have used sulphur there.

Dr. Beach: The Health Department have. May I ask Dr. Durgin for his views upon sulphur as a disinfectant?

Dr. Durgin: We discontinued the use of sulphur when we adopted the use of formalin.

Dr. Fitz: Has Dr. McCollom made any experiments with reference to determining the condition of the isolating rooms which he has disinfected, for instance, with regard to the destruction of diphtheria bacilli in them, and also as to the disinfection of bedding? As I understand, the bedding is simply exposed to the formalin and, it seems to me, the formalin not having penetrating power, the interior of the mattress might be in an unwholesome condition although the exterior had been disinfected sufficiently.

DR. MCCOLLOM: Some little time ago I did make a series of experiments, which are briefly as follows: After the disinfection of the room I took a flask holding about a litre of bouillon and had the air pumped through the flask about two hours and put the flask in an incubator, and the next morning, although there was quite a good growth, I was unable to find a growth of diphtheria bacilli.

Regarding the second point I did not make myself clear. In the ordinary case of diphtheria in the wards the mattresses are put in formalin, but if a patient is admitted with diphtheria and shortly afterwards develops scarlet fever the mattress is disinfected by steam and thoroughly aired.

DR. FITZ: I wish to ask Dr. Shea what his rule is in cases of scarlet fever with reference to considering the patient as no longer able to transmit the disease.

DR. SHEA: Our department has no time limit. When the attending physician certifies that the person is free from infection (that means after desquamation has ceased) our agent examines the patient and if he certifies that the patient is free, the disinfection takes place and releases the patient from quarantine.

DR. BOLLES: I should like to ask if some of these gentlemen will tell me what is a suitable form of apparatus to get for formalin disinfection for private use, something between the $25 or $50 lamp and the 75-cent lamp.

DR. MCCOLLOM: I think for a moderate-priced apparatus, Schering's lamp, where you use pastilles, is as good an apparatus as you can have. I have had as good results with that as with a $50 or $100 instrument. It is quite simple and the pastilles are not very expensive if you do not have to buy them in too large quantities. In private practice I should certainly use the formalin pastilles.

DR. BOLLES: How many pastilles would it take for a room 14 x 14 — two or three dozen?

DR. MCCOLLOM: Yes.

DR. FOLSOM: Is that as efficient as formalin gas?

DR. MCCOLLOM: In my experiments I have had just as satisfactory results. In one instance I know the amount of gas generated was very great. A rabbit was killed in about three-quarters of an hour and various organisms used for testing were destroyed.

DR. DURGIN: It must be remembered in the use of formalin, as with all other gases, that the amount to be used depends altogether upon the tightness of the room. Most directions given with regard to the use of formalin tell you that six or eight ounces of this commercial 40-per-cent. solution to the thousand cubic feet are sufficient to kill the bacilli. This may be true in the laboratory, but the moment you go beyond the laboratory into the dwellings where we have to do the practical work, you find it necessary to disengage the gas very rapidly in large amounts, at least two or three times the amount which you are advised to use by the makers of the disinfecting machines, to do efficient work.

DR. FITZ: Will Dr. McCollom say something more about the machine of the Empire Laundry Company?

DR. MCCOLLOM: The Empire washing and disinfecting machine is made of iron and capable of standing a pressure of thirty pounds to the square inch. After the washing has been done and the water allowed to run out, you close the stop-cock and open the steam-valve, which causes the temperature in the interior of the cylinder to rise to 250°, if there is a pressure of fifteen pounds to the square inch. This machine is only adapted for hospital purposes. It has a diameter of three to four feet and has to be run by machinery.

DR. FITZ: Perhaps Dr. Durgin will state whether the city runs a plant for the purpose of sterilizing goods on a large scale.

DR. DURGIN: We have two plants, one for the city and one in quarantine for that purpose. We are not using them very actively. Whenever a mattress is found badly soiled, it is ordered to be burned. Articles which are found to be badly soiled and can be boiled without injury are so treated. The mattress and pillow-covers, as a rule, need the most attention. I do not mean by this to disparage the general use of the steam-plants by any means. There are a great many articles which should be and are disinfected by steam, and cannot well be disinfected by any other agent.

DR. FITZ: I had particularly in mind whether Dr. Durgin was receiving such articles as draperies and carpets, which, coming from the sick-room in case of scarlet fever and diphtheria, it might be desirable should undergo some means of disinfection without destruction.

DR. DURGIN: Yes, sir.

DR. BOLLES: I would like to have Dr. Durgin tell us what the general directions given to the agents for disinfection of the houses after diphtheria or scarlet fever are, as to the extent with which it is to be carried out. I mean this: When a case of scarlet fever or diphtheria occurs in a house, what are the directions to an agent as to what and how many rooms shall be disinfected, and what rule has he to go by when he reaches the house, whether it is any more than it seems to be sometimes in cases I know, where a man comes in and inquires, "What room do you want disinfected?" and does it and goes off.

DR. DURGIN: We are dependent largely in those instances upon the statement of the attending physician, the local agent and the family. The habit is to try and find out how many rooms have been used by the little offender. We find it out by the best means that we can get at. As I stated in my first remarks, we try to have the child kept in one room in good isolation, and if we find at any time during the progress of the case that it is not kept in isolation, we send for Dr. McCollom's ambulance, arm our officers with an order to take the child to the hospital, and then clean up the house.

DR. BOLLES: I had this experience, which was a very surprising one to me. Some years ago I was called to a case of diphtheria. It was not my case. I think I was called in regard to the question of tracheotomy, and did it. It was in the times when physicians made a distinction between diphtheria and croup. Two little children were sitting together; one was wheezed up with "croup" and the other little child was staying by, and they were having a stick of candy together, the croupous child sucking it a moment and passing it to the well one, so on, back and forth. I remonstrated with the mother and said, "Don't let this thing go on," and she said the doctor said it was not diphtheria; it was croup and was not contagious. The well child was sent out. The other child went through the ordinary course of diphtheria

with tracheotomy and got well. The bacilli were present. The house was disinfected at the usual time and two weeks later the other child came back and promptly had diphtheria. After going through the experience of living with that other child a day or two, sucking candy from its mouth without infection, it came back four or five weeks later and promptly had diphtheria.

Dr. Fitz: The present method of disinfection would hardly admit of that occurring now.

Dr. Folsom: Unless the Board of Health has the co-operation of the medical profession, it can do very little. I had always supposed it was the duty of the physician, after there had been a case of infectious disease in a family, to notify the Board of Health if it wanted the disinfection done under their direction, in case he did not wish to do it himself. In case he wanted it done by the Board of Health, I always supposed it was the duty of the physician — I certainly have always done so — to give explicit information as to the extent of infection in the house and the amount of disinfection necessary. If the agent goes to the house and asks somebody else or has to chase around for the attending physician, he would not have much time to attend to his duties. It occurred to me that the Board of Health might do valuable work by sending circulars to the physicians in the community and tell them their duty in the case, and what the duty of the Board of Health is, and in a general way what is to be done with the mattresses and carpets, etc., but unless the physician does something the Board of Health cannot do everything.

Dr. Bolles: I do not know how far disinfection should go, and I have been anxious to know whether there was any approach to a scientific basis in regard to it. I have now a case of diphtheria in a comfortable family in a house of a dozen or fourteen rooms, and the story is this: A nurse girl came into the family two weeks ago and had sore throat. Another child in the family had sore throat and got over it without me. I was sent for for the boy in the family who had been sick about twenty-four to thirty-six hours and had the throat of diphtheria. The night before he slept in the bed with his mother and the little girl. That day he played around in the sitting-room, and of course was down in the dining-room for his meals and he also played in the attic. The next night he slept in the nursery. The little girl was sent upstairs. Now, what rooms shall I ask to have disinfected?

Dr. Durgin: If, in your judgment, this child while having diphtheria could have with his finger or otherwise infected any material in a dozen rooms, say so to us and the dozen rooms will be disinfected.

Dr. Bolles: I understand; but what rooms would you, after this story, advise to have disinfected? He had probably touched three-fourths of the things in the house.

Dr. Durgin: He may have infected every surface on which he has put his fingers. I think that those articles which he has handled should be rubbed over with a solution of bichloride of mercury or formalin. You may carry away all of the danger with a wet rag instead of filling large spaces with formalin gas. If he has remained sick for a long time in the room, he most likely has infected that room badly, but if he has played about occasionally in any room, convalescent, I would not regard that room as one calling for a general gaseous disinfection, as I would a room in which he was sick. If you believe that child has been all about the house in a way to infect those rooms, I think you should say so, and I think they should be disinfected. If the child has infected several other rooms in the house and is finally isolated in one room, the other rooms should be attended to at once. We sometimes disinfect a part of a house while the patient is in another part. I believe if one part of a house has been infected and the child is gotten into another part, the part infected should be attended to at once and the remaining part attended to as soon as the child is well. The child should be kept in one room strictly until it is well, or else go to the hospital.

Dr. Bolles: I mentioned this as an instance of what probably occurs in nearly every case of diphtheria or scarlet fever, that there is a period of twenty-four to forty-eight hours before the physician sees it that it is about the house with the other children in a state capable of conveying infection.

Dr. Durgin: I wish every physician would report at once all conditions requiring our attention in these cases, and the Board of Health will do what is necessary. I wish also that every physician here who has or can use a telephone would not fail to use it in reporting these cases, to secure the proper isolation earlier at home or in the hospital. We wish to cut every corner that is possible to cut in the treatment of these cases, in getting them to the hospital, and in the isolation if they are to remain at home. We have in our bacteriological laboratory cut corners, so that we answer you when you want a diagnosis made in about one-fourth part of the time we did a few years ago, and we wish to do the same in isolation, and we ask you to help us.

Dr. Folsom: If the Board of Health undertakes to disinfect every room in Boston in which there has been a case of diphtheria or scarlet fever, they will have to increase enormously their force, and three-fourths of them can be done under the eye of the visiting physician, and more promptly. It strikes me that it would be a good plan for the Board of Health to send a circular to every physician in the city with a few general directions how to meet these cases. In cases where the Board of Health has been kind enough to disinfect rooms that I have known about the work has been done very efficiently indeed. At the same time most of the work can be done by the visiting physician by a few simple directions, and certainly the Board of Health cannot undertake to go into every case that occurs in Boston in detail.

Dr. Durgin: We are sending circulars to every family where there is a case. They are not extended, and yet they cover the question of infection and isolation. In regard to disinfection by others, the statute law requires that this disinfection shall be done by the householder to the satisfaction of the Board of Health. Practically this cannot be done, and the Board does all of the disinfecting after the removal or recovery of the case. I appreciate the remarks of Dr. Folsom. I think in a great many instances the physician may direct and secure a great deal of this work by the family, and in doing so is teaching the family what to do in the next case and in the absence of the physician. If it should be necessary I would extend the circulars to any degree that will convey the necessary information. I am pleased with this discussion. This is what we ought to have fre-

quently. The room ought to be full. Everybody in the profession ought to be exercised on this question. The Board of Health is making a strong fight against infectious diseases, and doing it as reasonably as they can. You cannot have perfection. You will find cases occurring after all has been done, and you will find them after every process of disinfection known to the world.

Recent Literature.

Hand-Book of Obstetric Nursing for Nurses, Students and Mothers. Comprising the Course of Instruction in Obstetric Nursing given to the Pupils of the Training School for Nurses Connected with the Woman's Hospital of Philadelphia. By ANNA M. FULLERTON, M.D. Fifth edition. Pp. 262. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1899.

The four previous editions of this book evince its popularity. The definitions and descriptions in the book are as a rule good and concise, while the essential points are amply described for a book of this nature. The chapter on the Use of Antiseptics in Confinement Nursing is unusually complete and practical and should be read by every nurse doing confinement work.

With respect to the treatment advised, strong exception should be taken to some of the directions of the author; as in hemorrhage from threatened miscarriage or placenta previa hot douching at 115° F. in case of much of a flow is recommended, a course which might hasten rather than lessen the impending dangers.

Any use of lysol in connection with catheters might be a source of trouble in the hands of an inexperienced person, as lysol in the bladder is likely to give rise to an obstinate and painful cystitis. In the directions for the resuscitation of the asphyxiated infant five different methods are described at considerable length, many of which have become practically obsolete. It would seem to be better in a book of this character to give one or two good and direct methods of resuscitation which the author herself had tried and found of the greatest value.

A Text-Book of Obstetrics. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania. With 653 Illustrations. Pp. 846. Philadelphia: W. B. Saunders. 1898.

The professional standing and experience of the well-known author of this new text-book on obstetrics have amply fitted him for the work of preparing a book of this character. While the number of good text-books on obstetrics is considerable, yet a new book on this subject is always read with interest, particularly so if the work is that of a prominent writer. The book itself is an attractive one of ample size and contains a large number of illustrations, the majority of which are new and well chosen and many are of permanent value.

A change from the usual method of dividing a book into chapters is here observed, there being seven parts: Part I, Pregnancy; II, The Physiology and Management of Labor and the Puerperium; III, The Mechanism of Labor; IV, The Pathology of Labor; V, Pathology of the Puerperium; VI, Obstetric Operations; VII, The New-Born Infant; with, as a rule, only one or two chapters in a part.

With a fairly good index and the prominent subdivisions, the method has seemingly worked well in this author's hands, although for rapid and hurried reference the book is not of as much value as many others.

The text as a whole is well written and not as a rule too extended for students' use. As would be expected from the writer's extensive operative experience, the chapters on obstetric operations are fully up to date and worthy of careful reading, while, on the other hand, many of the details of obstetric practice which are of vastly more importance to the student and the average practitioner are treated too briefly, and are often difficult to find.

It is rather surprising to see that a five-per-cent carbolized vaseline is still advocated for use on the fingers in making vaginal examinations and that a handkerchief soaked in vinegar and inserted into the uterus is recommended to control post-partum hemorrhage, both practices which we believed had largely become obsolete.

In the teachings of the book as a whole, however, there are comparatively few points which can be seriously criticised. The foot notes are worthy of commendation, for, unlike many, the author has not filled the text with illustrative cases and comments, but where such have been made use of at all they have been inserted in fine print at the bottom of the page.

The Dispensatory of the United States of America. By GEO. B. WOOD, M.D., and FRANKLIN BACHE, M.D. Eighteenth edition, thoroughly revised and largely rewritten, with illustrations, by A. C. WOOD, M.D., LL.D., JOSEPH P. REMINGTON, Ph.M., F.C.S., and SAMUEL P. SADTLER, Ph.D., F.C.S. Philadelphia: J. B. Lippincott Co. 1899.

The United States Dispensatory has been so long a recognized factor in our medical life that there is small necessity for a review of a new edition. It is a pleasure, however, to note that the same conscientiousness has characterized its editors as in years gone by and that they have furnished us with a work suited to modern requirements.

The eighteenth edition of the Dispensatory contains 1,999 pages, or about 70 more than did the seventeenth. It differs from that chiefly in the construction of Section II, Part II, which is devoted to drugs and medicines not officinal. Sixty pages have been added to this part of the volume and nearly 200 articles written. This by no means signifies all that is new, as a comparison with the earlier text shows thorough revision. Practically all the newer remedies have been included and, as a rule, those omitted have been of comparatively little significance.

The eighteenth edition more than maintains the standard of its predecessors; in its present form it furnishes the profession with the best United States Dispensatory which has ever been written.

Defective Eyesight and the Principles of its Relief by Glasses. By D. B. ST. JOHN ROOSA, M.D., LL.D. With 36 illustrations and one set of test-types. Pp. 193. New York: The Macmillan Company. 1899.

Dr. Roosa states in his preface that for various reasons he decided to rewrite his book bearing the title "The Determination of the Necessity for wearing Glasses," which was published in 1888. In his more recent volume, which is the result of this revision, the

subject matter is divided into seven chapters having for successive titles: Measurement of the Visual Power; Presbyopia; Myopia; Hypermetropia; Corneal Astigmatism; Asthenopia, and General Remarks as to Lenses.

The desire that this manual may be found a reliable guide to both the student and the ophthalmologist and likewise of interest to the educated layman and the general practitioner is, of course, worthy of commendation, but the question naturally arises whether the attempt to provide such a one as shall satisfy these varying conditions is good judgment. An elaborate treatise on refraction cannot be expected to enjoy wide popularity among general practitioners, or the average layman, while a discourse on the subject, somewhat popularized, scarcely appeals to the earnest student or the practical ophthalmologist. Although the author may be pardoned for shortcomings in matters of taste and judgment, the obtrusion of personal beliefs so at variance with the well-accepted doctrines of today as, for example, overconfidence in the ophthalmometer; scepticism as well as contradictions as to the value of cycloplegics in refraction; disbelief in the existence of muscular asthenopia; entire omission of the subject of sciascopy; and advocacy of the obsolete "Franklin" $\frac{8}{9}$" glass to the exclusion of the more modern and convenient device, is to be deprecated. The high professional standing of the author lends to this book a certain value not borne out by a careful examination of its contents.

A Contribution to the Surgery of Fractures and Dislocations of the Upper Extremity. By J. E. Platt, M.S. (Lond.), F.R.C.S., Honorary Surgeon to the Hulme Dispensatory, etc. Pp. 228. Illustrated by 23 drawings and skiagrams. London: H. K. Lewis. 1899.

The work is largely a reprint of a series of papers published by the writer in the *Medical Chronicle* during the latter part of 1898 and the early part of 1899. The data for the work were collected at the Manchester Royal Infirmary during a period of fifteen months. Especial attention was paid to recording the nature of the injury, its causes, the bony displacement, the methods of treatment. The first seven chapters, or Part I, are devoted to the consideration of Fractures; Part II, the remainder of the book, to Dislocations. Each bone of the upper extremity is considered separately. The clinical data are compiled, classified and tabulated in various ways. Treatment is then described and the results obtained are stated. Finally, complications and sequelæ are enumerated, and each chapter concludes with the bibliography of the subject. The illustrations are interesting, especially the skiagrams. The book is attractive and is well written. It is fully indexed. It represents a great deal of work, both clinical and literary, on the part of the writer. It is a thorough review of the subject, except, perhaps, in some minute details.

A Manual of Physiology, with Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D., (Edin.), D.P.H., (Camb.), Professor of Physiology in the Western Reserve University, Cleveland, etc. Third edition. Philadelphia: W. B. Saunders.

At the present day it appears to be the duty of all teachers of physiology to write a book on physiology. Some neglect this duty, but their neglect is amply compensated for by the kindness of various other scientific people (astronomers and geologists excepted) who write one for them.

Here we have a book, however, written by a well-known teacher of physiology, and as such it is a relief, but as a text-book it is hardly a necessity — surely we have enough already, but still they come! Dr. Stewart "does not aspire to the dubious distinction of originality" but he has written a good book, thoroughly up to date in all respects, and written in an interesting manner, the comparative work scattered throughout the text being one of the most interesting features. In some parts of the book, as when discussing unsettled questions, there may be perhaps a little too much discussion and not enough stress laid upon the solid or fundamental facts to make the book valuable reading for a beginner in the sciences, who may be discouraged and disappointed when reading of the chaotic state in which some of our principal physiological problems exist. The chapters on the Circulation and Nervous System are excellent. The practical exercises contained in the volume are of the ordinary and necessary kind requisite for a sound knowledge of physiology, the description of their technique being clear and concise.

The letter-press is excellent, the binding medium, and as for the illustrations — the great number of which have caused an enormous waste of printer's ink, horrible things, white lines on black grounds! — the less said the better. A few are good; the others are fearful creations.

A Manual of Organic Materia Medica and Pharmacognosy. By Lucius E. Sayre, B.S., Ph.M., Dean of the School of Pharmacy; Professor of Materia Medica and Pharmacy in the University of Kansas. Second edition, revised, with Histology and Microtecnique, by William C. Stevens, Professor of Botany in the University of Kansas. With 374 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

A work of 700 pages containing, in addition to materia medica, chapters on Pharmacognosy, Insects Injurious to Drugs and Elements of Plant Histology and Microtrechnique. The introduction of these special chapters, particularly those which include vegetable histology, is of real value to students of pharmacy and others to whom a working knowledge of materia medica is necessary. The illustrations both of the plants and sections of the same are numerous and excellent. The paragraphs on Therapeutics, although necessarily limited in a work of this character, show a considerable degree of improvement over those in other similar works. The synthetic drugs are omitted entirely, only organized drugs with their preparations and constituents being considered. It is to be regretted that a few serious errors should be found. The statement on page 20 that acids when much diluted "are administered for the purpose of checking hyperacidity of the stomach by stimulating the production of the alkaline pancreatic juice and checking the acid gastric juice" is so evidently incorrect that no one could be misled. The drugs (page 24) stated to act as hepatic stimulants and hepatic depressants are certainly, in the light of recent research, all open to question, and certain of them have been proven to be entirely without the action credited. Toxicodendric acid, so called, prepared by the method given, is not toxic, being only acetic acid, and the true active principle of poison ivy, toxicodendrol, is not mentioned.

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REPORT OF THE MARINE-HOSPITAL SERVICE.

OWING to the war with Spain and the consequent acquisition of new territory, the past year has been the most active in the one hundred and one years of the existence of the Service. During the fiscal year 1899, 55,489 patients have been treated, of whom 12,610 were cared for in hospitals. A step in progress has been the transference of an abandoned military reservation in New Mexico to the uses of a hospital for the treatment of tuberculosis, and patients are now being sent. As the report states, this measure will not only be of benefit to the patients treated in this favorable climate, but will relieve the marine hospitals of these contagious cases, and will be of material aid to the great movement now being urged throughout this and other countries in suppressing this communicable disease. This wise action on the part of the Marine-Hospital Service is only another indication that the value of hospitals for this class of disease is being universally recognized. We are particularly glad to see that the Government is willing to stand behind such a movement, which certainly bids fair, in the near future, to put a new face on the problems to the individual and community, associated with this most widespread and fatal disease.

Laboratory investigations have been prosecuted with vigor during the year, particularly in relation to certain infectious diseases, and the possibility of their prevention or cure through the use of serums. The work in typhoid and yellow fever is still in progress. In connection with the always difficult matter of quarantine, which we have recently had occasion to discuss in these columns, it is of interest to note that the Service now owns and operates thirteen completely equipped quarantine stations. The report expresses the hope that finally, as has recently been done in the case of Savannah, all local quarantines may come under the exclusive jurisdiction of the National Government. Such action might, no doubt, conduce to greater uniformity of service and lead finally to a system as free from abuses as the nature of the matter permits.

With regard to the suppression of small-pox the position is taken that the methods of overcoming the disease in communities are so plain, and the protection of individuals so evidently the duty of the communities themselves, that the Marine-Hospital Service does not assume any financial obligations connected therewith. The Bureau has, however, issued a large number of a précis upon the methods of diagnosing and suppressing this disease, which have proved of great value to local authorities. Expert officers have been detailed in several of the States, at the request of the governors or health authorities thereof, and a general vaccination of crews of vessels on the Great Lakes, the rivers, and Atlantic and Gulf coasts has been conducted by the officers of the Marine-Hospital Service during the past winter to assist in the movement to suppress the disease. Measures have likewise been taken to put in effect the act passed by the last Congress authorizing a commission of medical officers to determine the number of cases of leprosy now in the United States. The general agreement that has finally been reached that the bacillus icteroides, discovered by Sanarelli, is the specific cause of yellow fever has led to the hope that a protective and curative serum may be found. Pending this outcome, however, the surgeon-general urges that other means be not neglected and that particular attention be given to proper sanitation. It is known, says the report before us, that there are many seaports of this hemisphere where yellow fever is endemic because of bad sanitary conditions, readily removable by proper sanitary engineering. An inquiry is now being conducted concerning the ports of the Western Hemisphere where yellow fever constantly prevails, with a view of definitely determining the reason therefor, and proving, if possible, that it is due to want of proper drainage, sewerage, and cleanliness of the harbor. The report suggests that in the interests of commerce, as well as of life and health, the time may come when an international agreement may be effected between the republics of this hemisphere by which the unsanitary conditions which perpetuate this western pest in certain ports will be considered a just cause of complaint by the other republics, and such quarantine or other restrictions imposed by mutual agreement upon the government possessing the offending port as will cause it to adopt the necessary measures for the removal of the evil. The surgeon-general points out that action of this character would be far-reaching in its effects upon the welfare and commercial prosperity of all.

With the various and trying responsibilities coming to us with our new possessions not the least is the problem connected with the diseases which go with the acquisition of territory in tropical countries. The short experience we have already had, however, and the success which has attended our efforts, notably in Cuba, does not permit us to doubt that the difficulties will be fairly met, with the final result that these for-

merly dreaded disorders will take their place among the preventable diseases. Nothing should so excite our enthusiasm, and raise our respect for the profession to which we belong, as this whole matter of preventive medicine. In it, no doubt, lies the greatest field of future work, and one to which the best energies of the best men will be devoted. The Marine-Hospital Service is clearly recognizing its possibilities and is accomplishing results of growing significance.

SOME RESULTS OF ENTHUSIASM.

As a rule, if the proper enthusiasm be brought to bear, we attain our ends. A case in point, to which we wish briefly to refer, is the enthusiasm for pathological research which has of late grown up in this community.

Not many years ago, and certainly quite within the memory of the younger generation, an autopsy was a not too frequent luxury of the aspiring medical student. It was generally supposed that any sufficient experience in this most important branch of medical training must be gained somehow outside the regular medical course. It is true that at our larger hospitals post-mortem examinations were the exception rather than the rule, a fact due rather to lack of enthusiasm, as the event has shown, than to a deeply rooted prejudice on the part of friends and relatives. At any rate, a change came, and without any great upheaval it may be said that autopsies are now rather the rule than the exception.

This has come about largely through the active interest in the matter taken by the younger men, notably the house officers of the various institutions, stimulated by their elders. Prejudice has been found far less impregnable than supposed, and reasonable representations have usually met with as reasonable a response. At one period the number of autopsies done at the Massachusetts General Hospital was far above 75 per cent of all patients dying in the institution, due to the strenuous efforts of its house officers.

When the Long Island institution started on its career as a hospital, it was urged that in that class of almshouse patients autopsies would be particularly difficult to obtain, owing to the active prejudices existing among the poorer classes of the community. The event has shown such a foreboding to be entirely unfounded. Between 50 and 60 post-mortem examinations have been made within a year, to the very decided benefit of medical teaching.

It must not, however, for a moment be supposed that this result has been obtained without effort. As an example of the enthusiasm which makes such results possible, we would mention the fact that very recently the assistant pathologist of the hospital, with several assistants, rowed to Long Island in the evening in an open boat, for the purpose of performing an autopsy, reaching Boston again at four o'clock in the morning. This requires devotion to one's work of a high order, but with such sustained enthusiasm there cannot be the slightest doubt that this least esthetic and most important side of medicine will quickly gain such a place that wise legislation, looking to the recognition of the right to perform autopsies in all cases, will, in time, be forthcoming.

MEDICAL NOTES.

Professor Birch-Hirschfeld. — The death of Professor Birch-Hirschfeld is announced. He has for many years held the position of professor of pathological anatomy at the University of Leipsic.

New Disease from Manila. — An unofficial report comes from Manila that a disease, beginning with dysentery and going on to a condition of more or less paralysis of the extremities, is prevalent among officers and men of the army. The description suggests neuritis.

Arrival of English Surgeons in Africa. — Sir William McCormac and Mr. Frederick Treves have reached South Africa, and are now with Sir Redvers Buller's army, where it is supposed their services will be most needed. Sir William was present with the troops at the action of the Tugela River, and Lieutenant Roberts, who was mortally wounded in that action, had the benefit of his great skill and experience.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, December 20, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 71, scarlatina 44, measles 45, typhoid fever 5, small-pox 3.

Small-Pox in East Boston, Mass. — Two cases of small-pox have developed within a few days in East Boston, one of which is said to be of a severe type. One of the cases it seems possible to trace to Chelsea, where the patient had been several days before. Both patients have been removed from their homes to the hospital.

Improved Conditions in Brookline, Mass. — It is reported by the Board of Health of Brookline that the conditions in that town have greatly improved during the last month. No new cases of diphtheria have appeared during December.

Yale Medical Alumni Association Lecture. — This annual lecture was delivered at New Haven December 13th last, on "Some Paths of Tuberculous Infection," by W. P. Northrup, M.D., professor of pediatrics in the University and Bellevue Hospital Medical College of New York. President Hadley was present and introduced the speaker. After the lecture there was a reception at the house of Dr. Leonard Bacon.

Shower-Baths for Public Schools. — The Hartford, Conn., Board of Health, it is said, has decided to put shower-baths in the public schools, as a pro-

tection against disease. The plan is that children who have been quarantined and barred from school because of disease existing in the buildings in which they live, will upon their return be required to bathe and have their wearing apparel thoroughly fumigated. Cleanliness is, undoubtedly, desirable, but how far a shower-bath, without other accessories, is likely to prevent disease remains to be seen. More definite results might be attained if the children could be fumigated as well as their clothes.

THE NEW HAVEN COUNTY PUBLIC HEALTH ASSOCIATION. — We learn from the *Monthly Bulletin* of the Connecticut State Board of Health that it announces the recent organization of the above Association. At the meeting called for this object every town in the county was represented. A constitution and by-laws had been carefully prepared, which were unanimously adopted. The Association makes eligible for membership all persons in the county who are officially engaged in public health work. This organization marks a long and strong step in progress. It is probably the beginning of a series of similar associations in each county, and perhaps a final combination of the whole in a general State society.

NEW YORK.

ELECTROCUTION CONDEMNED. — At the last meeting of the Society of Medical Jurisprudence, which, as the President stated on this occasion, was instrumental in securing the introduction of electrocution in the State of New York, Roger M. Sherman Esq., read a paper on "The Law and Science of Capital Punishment by Electricity," in which he objected strenuously to the method on the ground of its causing unnecessary suffering to the subject. His contention was that this suffering was due to the surface condition of moisture commonly met with in those about to be executed, and in the course of his remarks he said: "The moistened sponge to facilitate the current comes in contact with a moistened skin. Is there any reason to suppose that the general law which, especially in the case of electricity, seeks the path of least resistance will not convert the surface of the victim into a voltaic arc? Will the electric force rather penetrate through that non-conductor, the bony parts of the skull? The voltaic arc, which generates heat used for fusing the most refractory substances, is hardly the condition to create upon the surface of the human body as a mode of inflicting instantaneous and painless death, and in the name of humanity."

ANNUAL REPORT OF BOARD OF MANAGERS OF CRAIG COLONY. — The annual report of the Board of Managers of the Craig Colony for Epileptics, of which Dr. Frederick Peterson, of New York City, is the President, has been submitted to the State Board of Charities. Since its opening, in the early part of 1896, 504 epileptics have been received, of whom 378 remain. When the new buildings now in course of construction are completed, the capacity of the colony will be increased to a total of 720 beds. During the past year 95 new cases were admitted, 40 males and 55 females, and 35 were discharged. The death-rate for the year has been less than two per cent., and is the lowest in the history of the institution.

AN IMPORTANT LEGAL DECISION. — The Court of Appeals has recently reversed an order of the Fourth Appellate Division of the Supreme Court, which sustained the plaintiff's exceptions to the direction of a verdict for the defendant, and which granted a new trial, in a suit which Margaret Hughes, as administratrix, brought against the city of Auburn for damages for the death of her daughter. Mrs. Hughes claimed that the latter's illness and death resulted from disease caused by a defective and insufficient sewer, which in times of heavy rain overflowed into the cellar of the house where she resided. The opinion of the Court, as given by Judge O'Brien, but which was dissented from by two of the judges, was that the statute which permits actions for damages by reason of death caused by the wrongful act, neglect, or default of another has no application in such a case, and that no action against a municipality can be maintained by an individual for damages from sickness caused by the neglect of public officers to observe sanitary laws.

DECISION IN REGARD TO VESSELS FROM SANTOS. — The Board of Health has at last announced its decision in regard to vessels and their cargoes from Santos. It has ordered that the coffee from the *J. B. Taylor*, which sailed for Queenstown on December 12th, without being allowed to land, shall be roasted at a point designated by the department's officials, after which, the bagging having been burned, it shall be permitted to be landed in the city. The other three vessels which have been in quarantine, but on which no cases of plague occurred, are permitted to dock and to land their coffee, and in the future all vessels arriving from infected ports are to be allowed to dock after having been subjected to the precautionary measures prescribed by the health officer of the port and the Federal authorities. In cases, however, in which there has been infection on board, the cargo must be treated in the same manner as that of the *Taylor*.

Miscellany.

A RARE BOOK ON SURGERY.

AMONG the treasures of the Congressional Library is a volume on surgery by Ambroise Paré, with the date 1649. In the preface stands the following, possibly somewhat exaggerated, statement of his attainments, which, in view of his distinguished service to humanity, may very well be excused: "For God is my witness, and all good men know that I have labored fifty years with all care and pain, in the illustration and amplification of chirurgery; and that I have so certainly touched the work whereat I aimed that antiquity may seem to have nothing wherein it may exceed us, besides the glory of invention; nor posterity anything left but a certain small hope to add

some things." He further suggests the following rules, which possibly have some bearing even in our own day: "You shall comfort the patient with hope of recovery even when there is danger of death. Grief is good for none but such as are very fat."

AN INQUIRY AS TO THE INCREASE AND INFECTIOUSNESS OF CANCER.

THE Massachusetts State Board of Health is instituting an inquiry as to the increase and infectiousness of cancer. The Board has issued a circular which states that:

"Every year there is an increase in the reports to the State of the number of deaths from cancer, even when allowance is made for age and greater population. By some it is alleged that this is due to an increase of the disease itself; by others, that better diagnosis and more careful registration will account for it. Furthermore, the infectious nature of this disease, caused by a possible parasite, and its contagiousness have been strongly urged. It is with a view of helping to procure more accurate information upon these points that this inquiry is undertaken, and co-operation is asked to that end."

The following questions have suggested themselves as bearing on the subject, and possibly others will suggest themselves to recipients of the circular. Answers on any points will be gladly received:

(1) Looking back over your practice, do you find more cases of cancer in proportion to the total number of all cases coming under your observation, within the last few years, than you did in former years?

(2) If so, can you express it in percentage, comparing two periods as follows: Three or five years, 18 — to 18 —, per cent. of cancer cases to total cases; five years, 18 — to 18 —, per cent. of cancer cases to total cases?

(3) Do you think this can be accounted for by the fact that now more of your patients are elderly people than formerly?

(4) Do you now see more cases of internal cancer in proportion to the total number of cancer cases than formerly?

(5) If so, can you state it, as before, in percentage?

(6) Have you ever seen a number of cases originating about the same time, that would warrant you in speaking of an epidemic of the disease?

(7) Have you noticed cases of cancer in parts of the body that might come in contact, as in married people, that would suggest a communication of the disease from one to the other in that way?

(8) Have you noticed any case where several members of the same family living together have been affected?

(9) Do you know of any cases that would point to an hereditary transmission in the family?

(10) Have you noticed any cases in different families that have occupied the same house at different times ("cancer houses," so-called)?

(11) Is there any location where you have noticed cancer to be especially prevalent?

(12) If so, what is the nature of its soil, or physical or geological formation?

Replies may be addressed to Dr. Wm. F. Whitney, Harvard Medical School, Boston, Mass., who has charge of the inquiry.

FREE MEDICAL AID TO SOLDIERS' FAMILIES.

THE suggestion that physicians should give practical aid to the families of soldiers rendered destitute by the death or injury of the chief wage-earner calls out the following comments from the *Medical Press*: "The proposal that medical men should give practical help to the movement for relieving the wives and families of soldiers engaged in the South African War is founded on a knowledge of the humane generosity that we are glad to believe animates the medical profession. The gratuitous service already accorded to the community from that quarter is well-nigh incalculable, indeed, if we may believe complaints that have flooded medical journalism for the past half century or more, the habit has led to a crop of sorry abuses. From that point of view it may be well to utter a word of caution as to the manner in which this latest military relief scheme is carried out. The organizers, so we are told by a London morning paper, have been bombarded with offers of free attendance from leading practitioners of the West End. Surely, as regards the honorary surgeons and physicians of hospitals, dispensaries and other medical charities, attendance at their institutions would already provide the aid that is asked for. In every district there are scores of general practitioners who would be willing to extend their list of gratuitous patients so as to include the families of soldiers at the war. The published method of the Soldiers' and Sailors' Families Association is to look up the wives of all the soldiers at the front. Should they discover a case needing medical help they communicate at once with one of the free doctors, who attends the patient and sends on the prescription to the free chemist. Without careful precautions this plan opens the door to undesirable competition and jealousy, although at the same time it is impossible to withhold a cordial approval of the general tenor of the scheme."

SOME HIDING PLACES FOR THE TUBERCLE BACILLUS.

WE now know pretty well how to fight the tubercle bacillus in the open, but we are only gradually learning the infinite variety of ambush in which it may lie in wait for us. For instance, although the cigarette has an indifferent reputation among sanitarians, the cigar has hitherto been looked upon rather as a safeguard than a source of infection. There appears, however, to be some reason to suspect that this good character is undeserved. The United States Sanitary Commissioner at Constantinople, in a recent report to Surgeon-General Wyman, of the United States Marine-Hospital Service, says that the sanitary officer at Cavalla has been much impressed by the spread of tuberculosis among the workmen in the tobacco factories there. In order that the special qualities for which it is so highly prized may not be lost, Turkish tobacco should be exposed to the air as little as possible; consequently, in the course of its manufacture into cigars, no circulation of air is allowed in the workrooms. These rooms, besides being ill ventilated, are damp; the workmen are crowded in them and inhale all the dust caused by the manipulation of the herb. They sleep in the rooms, and are poorly clad and insufficiently fed. Bronchitis is universal, tuberculosis very common among them, and they spit all about the rooms. The bacillus may also lurk among the leaves of books. The New York State Board of Health recently received a communication from the Board of Health of Michigan stating that

twenty clerks in that State, who were working over several volumes of records, were taken ill with consumption and died. The books were examined by a bacteriologist, who found them full of tubercle bacilli. It is thought that they became infected from a clerk who had consumption, and who had the habit of moistening his thumb with saliva when he turned a page. A similar occurrence originating in a like cause has lately been reported as taking place in a German labor bureau. Here, too, investigation proved that the books had probably been infected by a consumptive clerk who had the habit of moistening his finger in his mouth whenever he turned the pages of a book. These facts have a moral for all of us in these days of free libraries. Another possible source of infection to which attention has recently been called is what is called in America the "Chautauqua salute," which appears to consist in the waving of handkerchiefs by way of greeting or applause. It was estimated that in a crowd of 20,000 persons who welcomed President McKinley in this fashion lately there were 4,000 suffering from pulmonary tuberculosis. How many myriads of bacilli were shaken out of their handkerchiefs is past all computation. Even the British cheer will, it is to be feared, come under the ban of the National Association for the Prevention of Consumption, for Flügge has lately shown that in ordinary speech a considerable number of micro-organisms are discharged from the mouth. A much larger number must be expelled in cheering. It would be an interesting problem to calculate the number of tubercle bacilli that came from the throats of Her Majesty's lieges during the Diamond Jubilee procession. — *British Medical Journal.*

RESEARCH *VERSUS* THE PRACTITIONER.

THE *Lancet* in the course of a recent editorial makes the following reasonable remarks concerning the relation of the theoretic to the practical side of medical education:

"It is impossible to study dissertations or discussions upon medical education without seeing that the speakers are generally divided into two groups, one of which believes in research and the other in resource. Each group, of course, is right, as each would be wrong if it affected to despise the other or to believe that the best medical man, the man that is most helpful to the sick in his generation, could be turned out upon its own recipe regardless of the opposite school of thought. But the work of pure research should for obvious reasons be dissociated from institutions like hospitals and carried on in some neutral place distinct from hospital premises. The hospital should be regarded by medical men, as it is by the public, as much as possible as a place for the cure of patients by recognized and established methods. Secondly, the research element in education must not be allowed to interfere with its more practical elements and the teaching of the readiest ways of relieving human suffering. The clinical method for some time, if not always, must prevail in medical education. Readiness and resource are indispensable in an efficient practitioner, whether he has to relieve a colic or remove an adherent placenta, and higher research work for the present must occupy a distinct department of medicine. It is probable that we shall have a long time to wait before we can reach such knowledge of physiology and pathology as to perfect our insight into disease, and in the meantime the problems of medical practice and the calls for relief of the suffering press. Readiness and resource are inestimable qualities in the practitioner, and that is the best medical school in which the student is taught the most indispensable and generally available modes of treatment for the cases which will come before him in actual practice. There need be no rivalry between research and resource, but there is much need for mutual respect between their typical representatives, and the best medical practitioner will be he who so appreciates them both as to learn lessons that will apply to the actual treatment of disease."

THE STRAWBERRY IN THERAPEUTICS.

APROPOS of the recent recommendation of the use of the strawberry as a special dietetic treatment of the innumerable ills of gout, Dr. John Knott, writing in the *Medical Press*, suggests that it may be interesting to detail the therapeutic history of this very palatable fruit. He has accordingly culled the most important evidence on the subject from the pages of the prominent herbal authorities of the past centuries. The quaint and always entertaining John Gerard gives his readers the following information on the subject of the therapeutics of the strawberry, which we quote in part:

"THE VIRTUES.

"*The Liquid Juice.* — Taken to the quantity of three or four spoonfuls or more, either mixed with the Syrup of the ripe Berries, or with a little Mutton Broth, Morning and Night, it cools the Blood and Liver, allays Inflamations of the Reins and Bladder, provokes Urine, takes away the heat, sharpness and scalding thereof; stops Women's Courses and the Bloody Flux, and decreases the Tumour or Swelling of the Spleen. Applyed to the Gums it fastens loose Teeth, stops Catarrhs, or Defluxions of Rheum to the Mouth, Throat, Teeth, and other Parts, and is singular good for hot, red, and inflamed Eyes, being dropt into them: As also to repel hot, red, and sharp Tumors or Eruptions in the Skin, whether Face, Hands, or other parts; and to take away redness of the Face, Spots or other Deformities of the Skin.

"*The Decoction of Roots, Leaves or Unripe Fruit in Water and Wine.* — It has all the former Virtues, being used in the same manner, and may be taken to half a Pint at a time Morning and Night.

"*The Lotion or Gargarism.* — Take of the Liquid Juice or Decoction a Pint, Honey three or four Ounces, Spirit of Wine two Ounces, mix and dissolve. It cleanses and heals foul Ulcers in the Mouth, Throat, Privities, or other parts, heals Ulcerated and Spungy Gums, and fastens loose Teeth.

"*The Distilled Water of the same Roots, Leaves and Berries.* — It is good for hot and inflamed Eyes, redness of the Face and Skin, and other Deformities of the same; hot Eruptions of the Same, Anthonies Fire, &c.

"*The Ophthalmick.* — Take of the former Distilled Water a Pint, Honey three Ounces, Spirit of Wine two Ounces, mix and dissolve. Dropt into the Eyes 3 or 4 times a day it is good against an Ophthalmy, redness, inflamation, and hot Rheums in the Eyes.

"*The Ripe Berries.* — They cool a hot and cholerick Stomach; as also the Blood, Liver, and Spleen; quench Thirst, and refresh weak and fainting Spirits.

"*The Syrup of the same Berries.* — It has all the same Virtues, and may be given two or three Ounces at a time upon Occasion.

"*The Distilled Water of the Ripe Berries.* — It is a Cosmetick for the Skin, good against Fever, and Inflamations of the Eyes; Anthonies Fire, and other like hot Eruptions; Melancholy, Faintings and Passions of the Heart.

"All readers of the above record must admit that the *latest* of the '*new*' remedies for gout has in former ages occupied a rather prominent position in the therapeutic armamentarium. And that the judicious internal administration of strawberries — with or without cream or other correspondingly pleasant adjuvant — will always prove 'comfortive and cordial' as well as 'arthritick,' to the gouty as well as to those not so afflicted, the present compiler, for one, entertains no doubt whatever." We occasionally feel that the vaunting of new remedies in our own day bears a certain resemblance to this optimistic view of the strawberry's virtues.

Correspondence.

SWEDISH BOOKS ON MASSAGE.

BOSTON, December 15, 1899.

MR. EDITOR: — Dr. A. H. Lindström's reply (JOURNAL, December 7th) to my letter on "Reviewers of Books on Massage," in place of invalidating what I said, really helps to confirm it, as your readers may possibly see for themselves, if they are sufficiently interested to read the following.

The late Baron Nils Posse was one of the ablest exponents of Swedish movements and massage in this country, and Dr. A. H. Lindström was at one time his pupil and assistant, and none the worse for that. In 1887 I wrote to Baron Posse and asked him for a list of books on massage in the Swedish language. He replied that there were no books specially devoted to massage in Swedish, and that though the Swedes had published short articles on massage in journals, yet for books they relied on other languages. Then I advised Baron Posse either to write a book on massage himself, of which he was quite capable, or else translate what he thought would be most appropriate. He chose my encyclopedic article in Wood's "Reference Hand-book." This is an article of twenty-six pages of fourteen hundred words to a page, treating briefly of massage in nearly all of its ramifications. It made a handy little book of one hundred and twenty pages. Information drawn from Scandinavian sources was freely used in it, and also in articles published by me in the "New York Medical Record," in 1877 and 1879, and in my "Treatise on Massage" in 1884 and 1890. So that Dr. Lindström's inference that I want to make people believe that I introduced massage into Sweden is gratuitous and absurd.

As for the titles of those Swedish communications that Dr. Lindström mentioned as antedating the translation of my encyclopedic article into book form, the first only is a book on "Gymnastics for the Sick," the third edition of which, translated into French, lies before me now with not a word about massage in it; the others are articles in journals on special subjects and not books at all, and with the results of most of these articles I have already familiarized your readers. Major Thure Brandt's article was probably a long one and has since been published as a separate monograph. All of this goes to confirm what I said, that the translation of my article in Wood's "Reference Hand-book," was *probably* the first thing in the shape of a book in the Swedish language. Dr. Gustaf Norström's learned and excellent book on massage is published in French and not Swedish, which would seem to indicate that the work of Swedes in this line is more appreciated abroad than at home.

Very truly yours,
DOUGLAS GRAHAM, M.D.

FURTHER PREVENTION OF CRUELTY TO ANIMALS IN THE DISTRICT OF COLUMBIA: SENATE BILL NO. 34.

PHILADELPHIA, December 16, 1899.

TO THE MEMBERS OF THE MEDICAL PROFESSION IN THE UNITED STATES: — The cause of humanity and of scientific progress is seriously menaced. Senator Gallinger has again introduced into Congress the bill for the "Further Prevention of Cruelty to Animals in the District of Columbia," which he so strenuously and misguidedly advocated in the last two Congresses. Its present number is "Senate Bill No. 34." Twice the Committee on the District of Columbia has also unfortunately and misguidedly reported the Bill with a favorable consideration. The Bill is speciously drawn to seem as if it were intended only in the interest of prevention of cruelty to animals. The real object of the Bill is two-fold: First, to prohibit vivisection, and, secondly, to aid the passage of similar bills in all the State Legislatures.

I need hardly point out to you that this would seriously interfere with or even absolutely stop the experimental work of the Bureau of Animal Industry and the three medical departments of the Government, the Army, the Navy, and the Marine-Hospital Service. The animals themselves might well cry out to be saved from their friends. No more humane work can be done than to discover the means of the prevention of diseases which have ravaged our flocks and herds. All those who raise or own animals, such as horses, cattle, sheep, pigs, chickens, etc., are vitally interested in the preservation of their health and the prevention of disease.

The inestimable value of these scientific researches as to the prevention and cure of diseases among the human beings it is superfluous for me to point out. Modern surgery and the antitoxin treatment of diphtheria alone would justify all the vivisection ever done.

As my attention has been called officially to the introduction of the Bill, I take the opportunity of appealing to the entire profession of the country to exert themselves to the utmost to defeat this most cruel and inhumane effort to promote human and animal misery and death and to restrict scientific research. It is of the utmost importance that *every physician* who shall read this appeal shall *immediately* communicate especially with the senators from his State, shall also invoke the aid of the representatives from his or other districts in his State and by vigorous personal efforts shall aid in defeating the Bill.

It is especially requested also that all of the national State and county societies at their next meeting take action looking toward the same end. If regular meetings are not soon to be held, special meetings should be called. Correspondence is invited from all those who can give any aid.

The Committee on the District of Columbia consists of Senator James McMillan, Chairman, Michigan, and Senators J. H. Gallinger, New Hampshire; H. C. Hansborough, No. Dakota; Redfield Proctor, Vermont; J. C. Pritchard, No. Carolina; Lucien Baker, Kansas; C. P. Wetmore, Rhode Island; C. J. Faulkner, West Virginia; Thomas S. Martin, Virginia; Wm. M. Stewart, Nevada, and Richard Kenney, Delaware. Personal letters may be addressed to them or to other senators. Petitions should be addressed to the Senate of the United States.

W. W. KEEN, M. D.,
President of the American Medical Association.

METEOROLOGICAL RECORD

For the week ending December 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....3	29.72	46	54	38	63	65	64	W.	S.	8	4	C.	F.	
M....4	29.52	42	54	31	89	57	73	S.	W.	4	22	C.	C.	
T....5	29.95	32	36	29	62	42	52	W.	S.W.	12	8	C.	C.	
W...6	30.09	33	37	29	80	54	67	S.	N.W.	8	9	F.	C.	
T....7	30.43	30	38	22	74	64	69	N.W.	S.	8	6	C.	C.	
F....8	30.02	38	44	31	76	50	63	S.W.	N.W.	14	11	C.	F.	
S....9	30.35	28	33	23	62	50	56	N.W.	N.	18	10	C.	C.	

* C., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 9, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1093	385	9.71	25.11	1.35	1.80	4.50
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	412	105	10.50	16.00	.40	3.20	7.00
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	207	64	5.28	22.08	—	1.44	1.44
Baltimore	506,389	159	41	8.19	16.48	1.89	.63	1.89
Cincinnati	405,000	102	—	4.95	9.90	1.98	—	1.98
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	100	26	16.00	14.00	2.00	12.00	2.00
Washington	277,000	114	33	10.35	11.04	.69	4.14	3.45
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	56	12	10.56	21.12	1.76	1.76	1.76
Nashville	87,754	27	8	7.40	22.20	7.40	—	—
Charleston	65,165	37	6	8.10	8.10	5.40	2.70	—
Worcester	111,732	36	15	16.66	13.88	—	2.77	15.08
Fall River	103,142	—	—	—	—	—	—	—
Cambridge	92,520	23	10	8.90	17.80	—	—	8.90
Lowell	91,114	31	11	9.69	19.38	—	6.46	3.23
New Bedford	70,511	25	10	12.00	20.00	4.00	—	4.00
Lynn	68,218	12	2	—	16.66	—	—	—
Somerville	64,394	12	3	16.66	16.66	8.33	8.33	—
Lawrence	59,972	16	11	6.25	—	—	—	6.25
Springfield	54,966	22	—	12.45	20.75	—	4.15	8.30
Holyoke	44,510	13	7	6.79	—	—	—	6.79
Brockton	38,759	8	5	—	—	—	—	—
Salem	37,723	6	2	—	—	—	—	—
Malden	36,421	11	3	18.18	—	—	—	—
Chelsea	34,235	15	5	46.62	—	—	6.66	26.66
Haverhill	37,651	5	3	—	20.00	—	—	—
Gloucester	31,428	5	2	—	—	—	—	—
Fitchburg	30,523	11	—	9.09	—	—	—	—
Newton	30,461	7	1	—	28.56	—	—	—
Taunton	28,527	10	2	—	10.00	—	—	—
Everett	28,162	5	2	—	60.00	—	—	—
Quincy	24,578	4	—	25.00	25.00	—	—	25.00
Pittsfield	23,421	5	3	40.00	—	40.00	—	—
Waltham	22,791	8	1	—	—	—	—	—
North Adams	21,583	2	—	—	—	—	—	—
Chicopee	18,316	5	2	—	—	—	—	—
Medford	17,190	3	2	—	33.33	—	—	—
Newburyport	15,636	4	—	—	25.00	—	—	—
Melrose	14,721	5	1	40.00	20.00	—	40.00	—

Deaths reported 2,632; under five years of age 520; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 273, acute lung diseases 520, consumption 320, diphtheria and croup 118, typhoid fever 61, diarrheal diseases 32, scarlet fever 18, measles 14, whooping-cough 15, erysipelas 7.

From scarlet fever New York 6, Boston 4, Philadelphia 3, Washington, Worcester, New Bedford and Fitchburg 1 each. From measles New York 11, Chelsea 2, New Bedford 1. From whooping-cough New York 9, Philadelphia 2, Boston, Washington, Providence and Charleston 1 each. From erysipelas New York 4, Cincinnati, Washington and Providence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending December 2d, the death-rate was 18.9. Deaths reported 4,135: acute diseases of the respiratory organs (London) 433, diphtheria 121, measles 110, fever 79, whooping-cough 60, scarlet fever 34, diarrhœa 32, small-pox (Hull) 14.

The death-rates ranged from 11.4 in Croydon to 25.2 in Hull: Birmingham 19.1, Bradford 16.8, Cardiff 16.8, Gateshead 15.2, Huddersfield 13.6, Liverpool 23.8, London 19.4, Manchester 18.8, Newcastle-on-Tyne 19.6, Nottingham 16.1, Portsmouth 16.9, Sheffield 21.8, Swansea 15.1, West Ham 16.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 16, 1899.

W. L. BELL, assistant surgeon, detached from the "Philadelphia" and ordered to the "Independence."

W. M. GARTON, assistant surgeon, orders of December 6th modified; detached from the Washington Navy Yard and ordered to the "New York" immediately.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 14, 1899.

OAKLEY, J. H., passed assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 13, 1899. To proceed to Queenstown, Ire., for duty. December 13, 1899.

WICKES, H. W., passed assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 8, 1899. To proceed to Glasgow, Scotland, for duty. December 8, 1899.

GREENE, J. B., passed assistant surgeon. To proceed to Bremen, Germany, for duty. December 8, 1899.

MATHEWSON, H. S., assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 13, 1899. To proceed to Liverpool, Eng., for duty. December 13, 1899.

CORPUT, G. M., assistant surgeon. To proceed to Marseilles, France, for duty. December 8, 1899.

KING, W. W., assistant surgeon. Detailed as inspector of unserviceable property at New Orleans, La. December 8, 1899.

MCISAACS, FRED, acting assistant surgeon. Granted leave of absence for two weeks from December 21st. December 9, 1899.

APPOINTMENT.

AGNES C. VIETOR, M.D., has been appointed assistant surgeon on the staff of the New England Hospital for Women and Children.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, December 27, 1899, at 8 P. M.

Dr. Frederick W. Johnson will report a "Case of Extra-uterine Pregnancy, with Operation."

Discussion on the "Conservative Operative Treatment of Uterine Fibroids." Opening papers by Drs. Washburn, Burrage and Kingman.

R. A. KINGMAN, M.D., *Chairman.*
C. H. HARE, M.D., *Secretary,*
265 Marlborough Street.

RECENT DEATHS.

SAMUEL KETCH, M.D., orthopedic surgeon, who was formerly president of the American Orthopedic Association, died suddenly at his home in New York on December 14th, of cardiac disease. He was born in New York City and was forty-four years of age. He completed his academic education at the College of the City of New York and was graduated from Bellevue Hospital Medical College. At the time of his death he was attending surgeon to the New York Orthopedic Dispensary and Hospital and to the Montefiore Home for Chronic Invalids.

DR. FREDERICK L. JOHNSON, M.D., of Maspeth, Borough of Queens, New York City, died on December 10th. He was born in 1869 and was a graduate of the Medical Department of the University of Pennsylvania.

Original Articles.

CONTRIBUTIONS TO THE SURGERY OF THE BILE PASSAGES, ESPECIALLY OF THE COMMON BILE-DUCT.[1]

BY W. S. HALSTED, M.D., BALTIMORE, MD.,
Surgeon-in-Chief to the Johns Hopkins Hospital; Professor of Surgery in the Johns Hopkins University.

JUST now I am very much impressed with the splendid results of operations for gall-stones in the common duct, for we have had of late a series of cases very desperately ill, and so transformed by their emaciation and discoloration, and so feeble in body and mind, that I could hardly picture to myself the various stages of the metamorphosis toward convalescence. Every one has seen a patient whose life has been despaired of convalesce from acute disease; they watched his rapid decline and expected an almost equally rapid recovery; but when the decline has covered a period of five or ten or perhaps twenty years, the changes wrought are so great and apparently of such permanent character that the complete restoration to health is the more astonishing. The large cirrhotic liver, the dry slate-yellow skin, the enfeebled intellect, the body emaciated to the last degree, seem at times almost to preclude all hopes of recovery to the practitioner who has not witnessed the changes so quickly brought about by nature as soon as the mechanical obstacles to recovery have been removed by the surgeon. What nature accomplishes without the surgeon's aid in her attempts to rid herself of the obstruction in the gall-passages and to repair self-inflicted damage is marvellous; but her methods are very crude and attended with much suffering and great danger, immediate and remote. I have, however, in mind at this moment two particularly creditable examples of nature's surgery.

In the first one the gall-passages were shortened to just the length of the two large stones, which completely filled them. One occupied the gall-bladder, the other the pancreatic portion of the common duct; the duodenum was not only adherent to the gall-bladder, but served in place of its anterior wall, which had been destroyed; the stone in the gall-bladder, therefore, rested on the wall of the duodenum, which was pasted, so to speak, over the great hole in the front wall of the bladder. There was nothing that could be called cystic duct; the choleductus was almost completely covered by the duodenum; the hepatic duct was much distended, admitting easily one finger. All signs of inflammation, except its results, had disappeared. The simplest conditions had been produced, and those most favorable to the expulsion of the stones in some subsequent attack; gall-bladder and common duct were reduced to a short, wide, nearly straight tube, which bore a striking resemblance to an atheromatous aorta. The stone in the common duct was behind the duodenum and buried in its wall.

The second patient had his first colic twenty-one years before admission to the hospital. He was never jaundiced. In the third attack, which began one month prior to operation, his temperature reached 106°. A physician aspirated pus from the distended gall-bladder about twenty-four days after the onset of the third attack, or three or four days before we operated. The gall-bladder was opened in two acts. The fluid in the gall-bladder was almost clear and not bile-stained. Diagnosis: Stone in the cystic duct. Cover-slips showed few bacilli. Cultures yielded bacillus coli communis, pure. Patient applied for readmission in eighteen months because he had noticed a hard body just beneath the skin in the mouth of the sinus. By simply dilating the sinus I removed four large, very dark green, almost perfectly cylindrical stones, which were piled up upon each other in this sinus, forming a column 10 centimetres high. Nature would herself have extruded these stones which she had brought to the surface without causing the patient any discomfort.

Equally marvellous are the processes by which nature destroys all traces of her surgical handiwork. I have operated upon two cases in which perforation of the gall-passages and intestinal walls, and the expulsion of the stone, had undoubtedly occurred, but was unable in one of them to find any evidence of the perforation other than a few light and easily separable adhesions. Again, in a case of appendicitis, followed by gangrene of the greater part of the cecum and a wide preternatural anus, there were, within a year, only a few very light adhesions about a pinhole opening in the colon to tell the story. These facts are enough to make the ordinary operations for fixation of the spleen, liver, uterus, etc., seem ridiculous. Adhesions about an artficial opening fortunately never disappear. If innocent fistulæ could be established, with the organs to be suspended or fixed, the problem might in a way be solved.

I wish to ask your attention to-night to a few of the unusual facts observed by us in our operations upon the bile passages, particularly the common bile-duct. Almost every one of our common duct cases has presented us with a new fact or two which can hardly fail to interest the general practitioner, as well as those who concern themselves with the surgery of the bile passages. To be as brief as possible, for the time is short, I will summarize at the outset some of the more noteworthy incidents observed by us in this department of surgery.

I. Dilatation of the first part of the duodenum caused by constricting adhesions; as the result, perhaps, of the dilatation, an ulcer ("distention ulcer" — Kocher) on the confines of the pylorus; the ulcer gave rise to a dissecting submucous abscess (chronic), rich in organisms because not reached by the most painstaking sterilization of the stomach. This abscess was punctured during the operation and a fatal peritonitis resulted (terminal infection), although, literally, only a drop or two escaped, and these were carefully wiped away.

II. Primary carcinoma of the duodenal papilla and diverticulum Vateri.

First operation. — Excision of portions of the duodenum (nearly its entire circumference), pancreas, common bile duct and pancreatic duct in order to give the little growth, no larger than a pea, a wide berth; circular suture of the duodenum and transplantation of the stumps of the common duct and the pancreatic duct (Wirsung's) into the line of this suture.

Second operation. — Cholecyst-cystico-enterostomy by the writer's method[2] for intestinal lateral anastomosis.

III. Dynamic dilatation of the first portion of the duodenum and of the pyloric portion of the stomach,

[1] Read at a meeting of the Surgical Section of the Suffolk District Medical Society, May 3, 1899.

[2] Bulletin of the Johns Hopkins Hospital, No. 10, 1891,

corresponding accurately to the limits of a sharply-circumscribed peritonitis; gall-stones in the gall-bladder; hydrops vesicæ. Case full of interest for diagnostician. Beautiful instance of circumscribed dynamic dilatation caused by local inflammation; no adhesions.

IV. Conditions suggesting hepaticocholecystostenterostomy (hepaticocholecystostcholecystenterostomy) as a possible operation; common and cystic ducts reduced to fibrous cords; dilated hepatic duct and gall-bladder. Remarkable toxic (?) renal colic resembling closely intestinal colic, associated with anuria; colic and anuria entirely relieved by salt infusion.

V. Choledochotomy performed twice. The gall-bladder, which was shrivelled at the first operation when two stones were probably in the common duct, was large and distended at the second operation when only one stone occupied the common duct (the ampulla). Hematemesis after the second operation.

VI. The densest adhesions that I have ever encountered in these operations, and probably the most difficult of my operations upon the bile passages. A small abscess in the midst of the adhesions; muscular coat of the duodenum converted into fibrous tissue; the exposed submucosa resembled gall-bladder so closely that the duodenum was aspirated and opened.

VII. Case illustrating the rapidity with which adhesions after perforation and extrusion of stone can be absorbed. Renal pains resembling intestinal colic (third observation of the kind within eighteen months). Tachycardia, believed to be due to toxemia of some kind (possibly benign embolism), suddenly disappeared during counting of pulse and while preparations were being made for subcutaneous infusion.

VIII. Discharge of pus and blood by mouth and rectum during severe gall-stone attack. Two years later, adhesions so extensive and so dense that the common duct was reached by a retroperitoneal route, over the right kidney. A stone in the ampulla had just ulcerated through the wall of the common duct and through its duodenal coverings.

CASE I. *Duodenal stenosis from gall-stones; dilatation of the stomach and of the pyloric end of the duodenum; duodenal ulcer giving rise to a dissecting abscess.* — J. S. age thirty-six, admitted February 5, 1899. Never had typhoid fever. Had malarial fever ten years ago with shaking chills. Never suffered from stomach trouble until present illness. Ever since he was eight years old has had sick headaches, lasting three to four hours, once a month; these would be relieved by emptying his stomach. Has never been jaundiced nor had clay-colored stools. Present illness began very gradually. Three years ago he noticed that his stomach would swell after eating and hardly regain its normal size before the next meal. Had more or less pain in the epigastrium, which was most marked about one hour after eating. No nausea or vomiting at first; bowels regular. About the first of last October the pain became worse, and his sick headaches were more numerous and more severe. His vomiting now began. The vomiting was accompanied by colic, so severe as to double him up. Patient was obliged to stop work for two weeks. He then resumed work until Christmas, since which time he has been unable to work. Patient now vomits much more frequently. The vomiting is preceded by heartburn for about three hours and much pain in the epigastrium. Patient feels greatly relieved after the vomiting. For two weeks after Christmas he had eructations of gas; none since then. Bowels usually constipated; sometimes did not move for three weeks. He still suffers much from headache. His appetite is good, but he is afraid to eat. In October, 1898, patient weighed one hundred and forty-five pounds; he now weighs one hundred and twenty-three pounds, and is very weak. Neither stools nor vomitus have ever been blood stained. Urine normal. Stools clay-colored. Patient not jaundiced.

On palpation of the abdomen no distinct tumor can be felt, but one detects an increased resistance just to the right of the umbilicus. The stomach's longest diameter is 31 cm.; its shortest diameter, 21 cm. The lowest limit of the stomach (tympanitic) is 3½ cm. below the umbilicus. Spleen not palpable. Heart and lungs normal. Glands nowhere enlarged. Pulse slow, feeble, 60 beats to the minute.

January 24th. Test breakfast (Ewald). Two hundred and sixty c. c. removed one hour later; green color; acid. Total acidity, 5.9 c. c.; 0.1 normal NaOH. Free hydrochloric acid; no lactic acid. No sarcinæ nor Opper-Boas bacilli.

February 4th. Test breakfast. Sixty c. c. removed. Total acidity, 20. No hydrochloric acid; no lactic acid. A few Opper-Boas bacilli (?).

February 5th. Stomach tympanitic. Clapotage readily obtained. Stomach peristalsis quite marked at times. Gurgling felt over small intestines. Stomach washing with sterile salt solution, as preparation for operation, begun. Stomach holds about two litres. Cover-slip preparations show streptococci and staphylococci and numerous bacilli.

February 7th. Stomach washing continued. Cultures taken from the residual material. Cover-slips show only a few streptococci in short chains; number much decreased since February 5th.

February 8th. Only a trace of free hydrochloric acid; no lactic acid. Total acidity, 6.2 c. c., 0.1 NaOH solution. Stomach peristalsis readily seen at times. Patient has been kept on sterile diet ever since his transfer to the surgical side. Has carbolic-acid gargle three times daily. Teeth cleansed three times daily with listerine and brush. Ingesta are boiled water, boiled milk, soft-boiled eggs, albumin. Micro-organisms seem to have entirely disappeared from the stomach, for the Petri plates are now sterile. Patient has shown great irregularity in amount of hydrochloric acid — at one time five per cent., at another zero.

February 9th. *Operation.* — Vertical incision through left rectus. This incision was made with the expectation of a possible gastro-enterostomy. Stomach much dilated. In the region of the gall-bladder is a mass of tissue tangled by dense adhesions. In this mass are gall-bladder and pylorus. The mass feels not unlike a new growth. Search for metastases negative, but a small, hard, dark tumor, the size of a pea, is discovered in the right lobe of the liver, near its edge, evidently an angiosarcoma. Pylorus separated from gall-bladder with the greatest difficulty. The separation had to be effected with the knife. It was impossible at first to determine accurately the relations of gall-bladder, pylorus and duodenum to each other. In the course of the dissection a pinhole opening was made in what proved to be the duodenum. The surrounding parts had been well protected against such an accident. A drop of fluid escaped, and from these cultures were taken. The little hole was immediately sutured. The gall-bladder was next opened, and not until then could it be determined positively that the pinhole opening was not in the gall-bladder, the contents of duodenum and gall-bladder so closely resembled each other; it was a thick, ropy, mucoid, colorless material. The gall-bladder was finally completely isolated. It was small and misshapen and contained two or three hard mulberry-like gall-stones. The cystic duct contained no stones and seemed to be very short and very fine. It was surrounded by numerous small vessels, two of which were tied. There was no bile in the freely-opened gall-bladder, which was drained in the usual way with a rubber tube, a catgut purse-string suture sealing the bladder hermetically about the tube. Bismuth gauze was packed about the outside of the gall-bladder. The peritoneum was closed with silk; the muscles, fascia and skin with silver. Patient bore the operation very well. At 6 P. M., temperature 101°; respirations quiet and regular; some distention of upper abdomen.

February 10th. Patient has been vomiting. Complains

of pains in stomach and tightness across abdomen. Pulse 108 and feeble; respirations 24; temperature 101°. Leucocytes at 12.30 P. M., 26,800; at 1.30 P. M., 34,000; 5.30 P. M., 36,000; 7 P. M., 37,800. At 6 P. M., patient drowsy, quiet; respirations 34; hands cold; pulse barely perceptible. Cover slips show no micro-organisms in the blood. Five hundred c. c. salt solution infused under each breast. At 10 P. M., 1,000 c. c. salt solution infused under breasts. Pulse improved, 140 to minute; low tension but regular rhythm. Respirations 36; expirations accompanied by short groans. Occasional hiccough; no vomiting; no nausea; no pain.

February 11th, 2.15 A. M. Patient died quietly.

Autopsy. — General peritonitis. Organisms, streptococcus pure. In the walls of the first portion of the duodenum, very near the pylorus, was an accumulation of thin muco-purulent fluid. This fluid was held in bounds by a soft wall of granulations; it was evidently an old abscess between mucosa and submucosa, which communicated with the lumen of the duodenum by a fine opening. A minute ulcer had perhaps been the starting point.

The first portion of the duodenum was distended, and the stomach was dilated; the distention was due to the constriction produced by the adhesions for which the gall-stones were responsible; as a consequence, perhaps, of the distention and the resulting venous stasis, a minute duodenal ulcer; and from the ulcer, the abscess, which was probably responsible for the fatal streptococcus peritonitis.

Of special interest in this case is, (1) the fact that carcinoma had been suspected. The duodenal stenosis, the dilatation of the stomach, the presence of Opper-Boas bacilli (?) justified the suspicion; (2) the success which attended Dr. Cushing's efforts to sterilize the stomach; the micro-organisms had apparently entirely disappeared from the stomach on the day preceding the operation, for the Petri plates, which from day to day showed fewer colonies, for that day were sterile; (3) the dissecting intermural abscess, starting probably from an ulcer which may have been due to thrombosis of a small artery, or to distention of the first part of the duodenum, or to vascular disturbances of some kind, infectious or mechanical. Although thrombosis of a small intestinal artery does not lead to infarction it may cause hemorrhages into the lumen of the intestine and slight intramural extravasations.[3]

Kocher[4] has demonstrated that in consequence of distention of the gut by retention of its contents and the resulting venous stasis very considerable changes take place in the wall of the intestine. He writes as follows: "Arnd has proved that in strangulated hernias when the circulation is greatly interfered with micro-organisms make their way into the mucous membrane and can pass through the intestinal wall (diapadesis of the micro-organisms). On the other hand, Cassin[5] and Charrin[6] have shown how very important the normal epithelium of the intestine is as a protection to the intestinal wall against micro-organisms as well as ferments. The absence of this protection against ferments and bacteria leads to intoxication and infection. Finally, Reichel[7] has demonstrated that the considerable accumulation of fluid above the site of the obstruction is due in part to a hypersecretion of the mucous glands. Under the influence of the intestinal contents which, increased in amount and stagnating, are the more rapidly decomposing (the ofttimes considerable phenoluria and indicanuria is proof of the increased decomposition), the epithelium in the first place becomes destroyed because its nutrition is interfered with under the influence of the venous stasis. There result circumscribed necroses and hence ulcerations of mucous membrane, particularly in places where the venous stasis led to ecchymosis, and, finally, perforation of the serosa and peritonitis may occur. For the origin of these ulcers which, many times observed, have not been properly estimated in their relations to ileus, various explanations have been given. The most substantial explanation is the one which attributes them to the pressure of hard scyballa, and it is not to be doubted that hardened fecal matter, just as foreign bodies, gall-stones, for example, can have pressure ulcers as a consequence. But the ulcers which we have pictured are certainly not dependent upon hard intestinal contents and the decubitus which they may mechanically bring about. They occur in jejunum and ileum as well as in colon by the filling up of these intestines with fluid or gas. The only factor which constantly accompanies these ulcers is over-distention of the intestine. Inasmuch as one can experimentally bring about a significant impairment of the circulation of the intestinal wall and its consequences by over-stretching of the gut, we hold to the proposition that the ulcers are best called distention ulcers (*Dehnungageschwüre*). Long ago I called attention to the fact that ulcers of just this kind could also in cases of strangulated hernia lead to a fatal peritonitis after constriction had been relieved, or a gangrenous loop of intestine had been resected and an entirely trustworthy suture had been made."

[3] Archiv für pathol. Anat. u. Physiol., 1875.
[4] Kocher: Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie, Bd. iv. Heft 2, 1898.
[5] Mittheilungen aus Kliniken der Schweiz, Basel, 1888.
[6] Fonctions protectrices de la muqueuse intestinale, Soc. de biologie, December, 1896.
[7] Zur Pathologie der Ileus, Deutsche Zeitschrift für Chirurgie.

Case II. *Primary carcinoma of the duodenal papilla and the diverticulum of Vater, successfully removed by operation; cystico-enterostomy three months after the first operation.* — Mrs. M. L., age sixty. Until August, 1897, patient was well. Her first symptom was itching of the skin, which came on suddenly and soon became severe. Patient says jaundice did not appear for nearly a month after the onset of the itching. Before the appearance of jaundice diarrhea set in, and there were six or seven stools a day which were watery and clay-colored. Patient has had no chills, no fever and no sweating. With the onset of the jaundice she noticed shortness of breath and an occasional swelling of the feet and legs. About the first of January, 1898, she had persistent bleeding of the gums for three days, following the extraction of a tooth. At times the hemorrhage was profuse. Two months ago a tumor was noticed in the region of the gall-bladder. This tumor does not seem to the patient to have increased in size and has never been tender. In March, 1897, she had several attacks of severe pain in the epigastrium. These attacks were not accompanied by vomiting or fever or sweating. A few weeks later she had a second but milder attack. The stools were light in color for two or three days at the beginning of these attacks, but patient recalls no change in the color of the urine or the skin at that time. The daughter of the patient states that these attacks of pain were very severe, and that her mother seemed very ill.

Examination February 14, 1898. Patient somewhat emaciated, but fairly well-nourished. Mucous membranes pale. Heart and lungs normal. There is a distinct prominence on the right side, the highest point of which is midway between the umbilicus and anterior superior spine. The prominence descends markedly with inspiration. On palpation the prominent area proves to be pear-shaped and distinctly fluctuating. The border of the liver, which reaches almost to the crest of the ileum, can be distinctly felt.

February 14, 1898. *Operation.*—Vertical incision through rectus muscle. A greatly dilated but not especially dense gall-bladder presented; no adhesions. Liver projects five cm. below costal margin. Four silk sutures[a] placed in fundus of gall-bladder with French needles. Small aspirator introduced in centre, between sutures; syringeful of clear fluid withdrawn. Gall-bladder opened; contents evacuated. In the latter part of the fluid were many fine, sand-like, hard, greenish, round particles, suggesting miniature gall-stones. Common and cystic ducts were dilated to the size of one's thumb. A longitudinal opening two cm. long was made in the common duct. The same colorless fluid escaped from this incision. Duct explored with probe and finger. What seems to be a small, very hard stone is felt at site of ampulla. To determine the nature of this body, an incision was made through the wall of the duodenum. No glandular metastases discoverable. The stone-like body proved to be, as was feared, a carcinoma of the papilla.

Excision of the cancerous growth. — To give the growth a wide margin, a large piece of duodenum was excised, a wedge-shaped piece with the apex at the mesenteric border of the intestine. About three-quarters of an inch of the common duct and a shorter piece of the pancreatic duct were excised. The wound in the duodenum was closed in the usual way with mattress sutures. This was practically an end-to-end anastomosis of the duodenum. The common duct and pancreatic duct were transplanted into the duodenum along the line of suture. A linear incision into the common duct, which had been made for diagnostic purposes, was closed over a hammer. The gall-bladder was sutured to the peritoneum.

Abdominal wound closed in the usual way: the peritoneum with a running silk suture, the muscles and fascia with buried silver sutures, and the skin with a continuous subcuticular silver suture. Bismuth gauze inserted to protect the suture of the intestine and common duct. Drainage tube surrounded by bismuth gauze, and gutta-percha tissue inserted into gall-bladder and held in place by a purse-string suture of catgut. Wound dressed with silver foil. Gutta-percha tissue placed between the raw edges of the skin and the gauze packing. Operation lasted three hours and ten minutes. Patient experienced apparently no shock from the operation.

February 16, 1898, first dressing. Profuse discharge of bile in dressing. Icterus less intense. Considerable abdominal distention, but no signs of peritonitis.

February 18, 1898. Distention has almost completely disappeared. Tongue clean. Patient comfortable.

February 22d. Discharge of bile into dressings still profuse. Stools becoming distinctly bile stained. Icterus rapidly disappearing. Urine dark and gives bile reaction. Patient hungry.

February 27th. Skin sutures, tube from gall-bladder and the last of the bismuth gauze removed. Evacuations not bile stained.

March 4th. Discharge of bile diminishing. Opening in gall-bladder has been plugged for several days with bismuth gauze in order to determine, if possible, whether or not the transplanted common duct is patulous. Yesterday patient vomited 125 c. c. of brownish fluid.

March 5th. Patient has had a large stool, quite dark in color. There is very little leakage from the opening into the gall-bladder, which is almost closed.

March 13th. Icterus continues undiminished. Stools are still slightly bile stained. Abdomen somewhat distended. Active peristalsis is occasionally visible through the abdominal walls. Liver still readily palpable, the right lobe extending almost to the iliac crest. Appetite good; tongue clean; no indigestion.

March 27th. Attempts to plug the opening of the gall-bladder, with the hope of forcing bile into the intestine, not satisfactory, although there is some bile in the stools. Patient's general health good. Icterus has disappeared. Patient able to walk about, and is gaining strength rapidly.

April 5th. The conjunctivæ are clear, but there remains still some evidence of bile pigment in the skin. No bile whatever in the stools, although the opening into the gall-bladder is almost closed: it is barely large enough to admit a probe. Patient is beginning to have indigestion. The appetite as a rule, however, is good. The liver is diminished in size.

April 8th. Patient complains of colic and abdominal pain. Considerable abdominal distention. Dressings bile stained. No nausea; tongue is clear.

April 12th. Some nausea and vomiting. No distention of abdomen. Dressings very slightly bile stained.

April 15th. Abdomen soft and relaxed, but borborygmi heard by attendant and appreciated by patient. Little or no bile in dressings.

May 5th. *Second operation: cholecystduodenostomy or cysticoduodenostomy.* — Suture of fundus of gall-bladder. Complete closure of abdominal wound except for drainage. Incision alongside of old cicatrix, circumscribing fistula. Gall-bladder quite small, no larger than one's thumb. Liver about normal in size. Many fine adhesions about gall-bladder, which were easily separated. Gall-bladder and ducts thoroughly exposed. The line of suture of common duct at previous operation was readily distinguishable by black-silk stitches, but it was almost impossible to find any trace of the duodenal suture. Common duct incised at site of old suture. Probe cannot be passed into the duodenum, but there is no positive evidence of recurrence of the cancer. Unsuccessful attempts have been made before the operation to pass a probe from the gall-bladder through the common duct into the duodenum. Opening into the common duct closed in the usual way with mattress sutures over hammer. An anastomosis between duodenum and the gall-bladder or cystic duct was effected without much difficulty, although the parts to be sutured were very deeply situated and inaccessible. The duodenum was probably a little less freely movable than at the previous operation, and the gall-bladder was so much reduced in size that we were compelled to pass some of the stitches into what seemed to be the cystic duct: in any event, the neck of the gall-bladder had to be used for the anastomosis. A *bougie à boule*, passed into the gall-bladder, was used as a darning ball to assist in the placing of the sutures. All the sutures were passed, and none of them tied, before the openings into the neck of the gall-bladder and duodenum were made, the method employed being that which I described many years ago for intestinal anastomosis. The opening in the fundus of the gall-bladder was closed with mattress sutures which inverted the wall. The abdominal wound was completely closed except for protective wicks which were passed through this line of suture into the gall-bladder. What seemed to be an enlarged gland was palpated during the operation but not removed. It was forgotten. Patient suffered little or no shock from the operation.

May 6th, 4.30 P. M. Patient very restless, tossing about and occasionally vomiting. 10 P. M., has had occasional quiet naps and is more comfortable.

May 7th. Complains of pain in back and abdomen.

May 8th. Is very comfortable. Yellowish stool, containing small particles of brown fecal matter.

May 9th. Large greenish-yellow stool.

May 11th. Patient has had daily since last note one or two greenish-yellow soft stools. She still complains of slight pain in abdomen.

May 12th. A large, quite well-formed greenish-brown stool. Considerable flatus expelled. Complains of gas in stomach. Slight nausea. 4 P. M., vomited thick, mucus-like, chocolate-colored fluid containing milky curd.

May 29th. Patient complains of itching in the hands, where the pruritus has always been the greatest when icterus was pronounced. No jaundice, however, is apparent.

June 8th. Slight chill followed by rise of temperature to 39°. Trace of bile in the urine. Nausea, but no vom-

[a] We find this a very useful procedure. The gall-bladder is manipulated by these sutures and handling is thus avoided. These sutures are of additional service when it seems advisable to distend, subsequently, the gall-bladder with fluid, and when it is desirable to close it temporarily during the operation.

iting. No pain and scarcely any tenderness of the abdomen. Wound almost completely closed.

June 9th. Temperature normal. Patient feels well.

In the early autumn of 1898 this patient returned to the hospital too ill for operative interference, and in a few weeks died. During the summer I had corresponded with her urging her to return to the hospital, for it was clear from her letters that the fistulous communication between the gall-bladder and the duodenum was not working well. At the autopsy it was found that the carcinoma had recurred in the head of the pancreas and duodenum, closing the common duct and interfering with the perfect action of the chlolecystenterostomy, or cystico-enterostomy. The anastomosis, as we had supposed, had been made between the dilated cystic duct and the duodenum; the fistula was still perfectly pervious and should have acted nicely except for the interference, a little twisting or bending, created by the new growth.

The result in this case is not encouraging, for it was my opinion at the time of the operation that the case could not have been more favorable. But I did in this case what I never do if it can be avoided, namely, cut well down to or perhaps a little way into the new growth for the sake of diagnosis. It is furthermore a rule in my clinic that pieces shall not be excised from new growths *in vivo* for diagnostic purposes; we must learn to make the diagnosis in other ways. In the case of a very small breast tumor it is occasionally impossible to make the diagnosis. In such cases I have approached the tumor with the knife very cautiously, and could tell before I reached the growth, from the findings in the outlying tissues, whether we had a malignant tumor to deal with or not. I shall have more to say about this at another time, but I feel that one cannot condemn too strongly the universal practice of exploring tumors with the knife or with the harpoon or even with the needle. After investigating the subject superficially, I have the impression that amputations for the truly malignant sarcomata have comparatively seldom been successful when preliminary exploration has been done. If I find it necessary to make an incision into a sarcoma of an extremity, I first apply an Esmarch bandage, and if the tumor is a malignant growth, the bandage is not removed until the growth has been removed. So, too, in cysts of the breast; we should not aspirate them because (1) they may be malignant and the aspiration harmful, and (2) if malignant, the aspiration does not tell us so. This is the first and I believe the only instance in which an operation for primary carcinoma of the duodenal papilla has been done; moreover, I know of no other case of excision of a portion of the common duct. Heidenhain[9] (Worms) demonstrated last year at the twenty-seventh Congress of German Surgeons, a shrivelled gall-bladder which he had removed for a small cancer of its wall; after extracting six calculi from the bladder, a little button-like prominence on its wall caught his eye. The microscopical examination showed little or no thickening of the mucous membrane, but unmistakable alveoli in the muscular wall of the gall-bladder; furthermore, some of the lymph vessels were plugged with cancer cells. In three months the patient succumbed to liver cancer which had attained great dimensions, although at the time of the operation the liver was apparently perfectly normal. At the same session Hollander[10] (Berlin) reported an extirpation of the gall-bladder and cystic duct and resection of a portion of the liver for cancer, which *per continuitatem* involved the liver. The result he could not give, for he had performed the operation only three weeks before. There can be little doubt as to the ultimate result of Hollander's operation, although, having operated only three weeks previous to his report, he could not give it.

[9] Heidenhain: Verhandl. d. deutsch. Ges. f. Chirugie, 1898, p. 126.
[10] Hollander: Loc. cit., p. 131.

CASE III. *Dynamic or paralytic dilatation of first portion of duodenum and of pyloric end of stomach. Gall-stones in gall-bladder and cystic duct. Obstruction of cystic duct and hydrops vesicæ.* — Mrs. S. G. M., age forty-six. Admitted January 31, 1899. Never had typhoid fever. Headaches at intervals all her life, sometimes very severe and lasting several days; especially severe during menstruation. Digestion has been bad for sixteen years. After meals a heavy feeling in epigastrium followed by fulness and a feeling of suffocation. Belching of gas common; occasionally would regurgitate a mouthful or two of food. Rarely vomited; never any blood in vomitus. Bowels generally constipated. Micturition frequent, occasionally twenty times a day; generally several times at night. Menses regular. Average weight, one hundred and fifteen pounds. Has lost in weight of late. Present illness, patient states, began December 31, 1898, although she was much run down before that time. This attack came on gradually. Some distention of stomach, and in the afternoon some pain which became severe at night. The pain was in the epigastrium — a colicky pain — which, as she expressed it, "went through the abdomen." Morphia exhibited.

Next morning patient felt easier. Morphia continued for next two days. Pain relieved but not entirely subdued. Stools after this were very black, like tar. Physician found something in the stools which he thought might possibly be a gall-stone. Since this attack patient has never been well; constantly in bed. Great deal of soreness through abdomen, and at times attacks of colic. These attacks usually came on in the evening without known cause. Much belching of gas. Bowels regular. Stools not clay-colored. No jaundice. Patient's daughter states that for many years her mother has had attacks of abdominal pain, for which the doctor gave morphia hypodermically. There were intervals of several months between the attacks.

Examination. — On palpation no tenderness except beneath the right costal margin. Here there is to be felt a rounded mass resembling a distended gall-bladder. Right rectus muscle very hard. The mass which is to be felt at the outer edge of this muscle seems lobulated.

January 29th. Attack of what patient calls "colic." She is nervous and distressed and complains of abdominal pain. Swallows air and belches it up again.

January 31st. Transferred to surgical side. On inspection a distended piece of gut between umbilicus and tumor, extending obliquely from the left and above to the right and below, probably six or eight inches in length. Peristalsis is to be observed at intervals; it is not very active, but at times is quite constant. A tumor suggesting gall-bladder projects from the lower border of the liver. It seems to be nodular, or rather has a nodule on it at its upper part. This tumor descends with respiration, and is somewhat tender. The edge of the liver can be felt on each side of the tumor.

February 3d. *Operation.* — Vertical incision through right rectus muscle. No fluid in abdomen. Gall-bladder distended to size shown in diagram on blackboard. Its walls were greatly thickened and white. The first portion of the duodenum and the pyloric end of the stomach were distinctly distended. Corresponding accurately to the distended portion of the bowel was a slight peritonitis, scarcely more than an injection of the serosa, and an exudate, only enough to cause very fresh adhesions between the duodenum and the gall-bladder. We should hardly call them adhesions; the duodenum seemed rather to be lightly glued

to the gall-bladder just as it might be an hour or two after an operation.

I was extremely interested to find that the vascular injection seemed to correspond accurately to the limits of the dilatation (almost ileus at times). The adhesions, if we choose to call them such, were so fresh that they were separated by very slight pressure of the finger. The general abdomen being walled off by gauze packing, the gall-bladder was opened. Its contents were colorless and in consistency like the white of an egg. Cover-slips were negative. First, one large gall-stone was found, with a facet at each end. Then a second stone was detected with a probe in the cystic duct, but it could not be dislodged. Cysticotomy was performed and the stone removed in fragments. The previous attempts to dislodge it had evidently broken up the stone. Incision in cystic duct closed by mattress sutures. Gall-bladdder treated in the usual way; namely, hermetically sealed about a rubber tube and protected by bismuth gauze from the general peritoneal cavity. Abdominal wound closed in the usual way.

At first no bile escaped by the tube, but on the 10th of February bile was abundant in the dressings.

March 2d. Wound has completely healed. Patient discharged cured.

Various diagnoses had been made in this case: (a) distended gall-bladder with adhesions; (b) cancer of bile-ducts and liver involving secondarily the colon; (c) carcinoma of the colon involving secondarily the gall-bladder and gall-ducts. The distended intestine I watched with much interest several times. It seemed to me too small for colon; and no mass could be felt in the distal side of the distended gut to explain the distention. Peritonitis is undoubtedly the most common cause of paralytic ileus, and I have repeatedly observed in appendicitis that dilatation of the cecum and of the ileum may be caused by a very slight, perhaps merely a toxic peritonitis, but I have never before noticed such a sharp line of demarcation between the inflamed and non-inflamed portion of the intestine. The dilatation corresponded accurately to the vascular injection. This was the more striking because two portions of intestine so very different were involved. That the comparatively thin wall of the duodenum should be more or less affected by inflammation of its serosa is to be expected, but that such a thick-walled gut as the pylorus and the pyloric end of the stomach should be paralyzed by such a very slight inflammation of the serosa was surprising.

CASE IV. *Conditions suggesting hepaticocholecystostcholecystenterostomy as a possible operation. Renal colic simulating intestinal colic; relieved by salt infusion.* — Mr. ———, age sixty, had been suffering from gall-stones for several years, but not until he became persistently icteric and very ill was the first operation performed. The operator, a distinguished surgeon, found most difficult conditions confronting him. The entire common duct was impervious and reduced to a fibrous cord; the cystic duct, greatly narrowed, was probably impervious; the gall-bladder and hepatic ducts were dilated. The surgeon, very skilfully, I am told, attempted to construct a new common duct over a tube or catheter from the tissues which he had at his disposal. Just what these available tissues were I do not quite understand. For about five weeks, and until this tube was removed and the surgeon went away on his vacation, the patient was fairly comfortable and seemed to be gaining a little. Then he developed high daily fever and occasional chills, and became jaundiced again. I saw the patient in consultation with Dr. Gardner, of Providence, about one week, I believe, after the fever and the symptoms of obstruction had manifested themselves. The gall-bladder could not be felt. There was perhaps a little more muscle resistance on the right side over the region of the bile-ducts than on the left side, also perhaps the suggestion, rather indefinite, of a little induration, such as might be caused by fresh adhesions. It occurred to me that in case the gall-bladder and hepatic ducts were still both dilated one might establish a fistulous communication between them, making an hepaticocholecystostomy and then, immediately, a cholecystenterostomy; in all an hepaticocholecystostenterostomy. In any event, we thought that an operation for the relief of the symptoms was imperative. Accordingly a vertical incision through the inner margin of the right rectus muscle was made, avoiding the fistulous tract which remained after the withdrawal of the tube over which the new common duct had been constructed. I worked for two hours trying to identify and to separate the parts concerned in this operation. The gall-bladder, the ducts and the duodenum were glued tightly together and to the under surface of the liver. The gall-bladder which was finally extricated from the tangle was very small, contracted and empty; the cystic duct was a fibrous cord. When bile was at last reached the patient was in such bad condition that the operation had to be discontinued. The parts in the neighborhood of the common and hepatic ducts were so firmly matted together that neither the latter nor the remains of the former had been demonstrated when it was necessary to bring the operation to a close.

The patient rallied satisfactorily from the immediate effects of the operation; but twelve or fourteen hours thereafter complained of very severe abdominal pain, which, as he indicated the location of it, seemed to be in the region of the colon and passing from right to left. The pain, though perhaps constant, became excessive during the paroxysms. It was never referred by the patient to his back or sides, nor did it radiate to the testicles or groin or crest of ilium. The abdomen was perfectly flat, and peristalsis could not be observed. Nevertheless, large high enemata of hot water were given, but without appreciable relief. The urine was scanty and very dark and contained albumin and casts and a few blood cells. Dr. Gardner promptly attributed the pains to the kindey, and related a somewhat similar case. Believing his interpretation of the pains to be correct and recognizing the fact that something must be done quickly for the relief of the kidneys, I transfused about 750 c. c. under the breasts. The pulse, which was alarmingly rapid before the transfusion, dropped 40 beats within thirty minutes, and 20 beats within five minutes, and the colicky abdominal pains disappeared. Within twenty-four hours the infusion was repeated with similar results. The kidneys responded promptly to both infusions.

I report this case because (1) it suggested a new operation, hepaticocholecystostcholecystenterostomy, or hepaticocholecystostenterostomy; (2) it was the first of three cases of colic which I have seen associated with scanty high-colored urine; and (3) it was, so far as I know, the first instance of subcutaneous infusion of salt solution for the relief of toxic renal colic. Soon after this Dr. Young, by salt infusions, undoubtedly saved the life of one of my patients whom I had operated upon for appendicitis, and who was suffering from perhaps the most furiously rapid toxemia that I have ever known of. This case has been reported by Dr. Young in the *Maryland Medical Journal*. The resemblance to intestinal colic is so great that it would undoubtedly be mistaken for it even by experienced practitioners of medicine. This was a valuable experience for me, for since then I have twice recognized as renal colic this pain, which had been regarded as intestinal colic and treated with high injections. Our list of desperate cases of toxemia treated advantageously with infusions of salt solution is assuming large proportions.

CASE V. *Choledochotomy performed twice within four and one-half months. The gall-bladder, very small and contrac-*

ted at the first operation when two stones were in the common duct, was large and distended when only one stone occupied the common duct (the ampulla). — Mrs. M. P. R., age fifty-eight, admitted May 3, 1897. October, 1892, patient began to have moderately severe attacks of pain in the region of the gall-bladder. The attacks would come on suddenly and last several hours unless relieved by anodynes. The pain, milder at first, would gradually increase until it became very severe; it commenced in the epigastrium and extended into the right hypochrondrium. During the winter of 1892–1893 the attacks occurred every two or three days. Occasionally there would be an interval of two or three weeks. During the remainder of 1893 and all of 1894 the attacks persisted at longer or shorter intervals, the pain always beginning in the epigastrium and radiating to the back. Sometimes during a severe attack there would be slight vomiting. Morphia generally gave relief. Patient says that the attacks were not accompanied by tenderness nor tumefaction. In the attacks observed by me there was always tenderness and, after the first operation, distention of the gall-bladder. In the spring of 1895 she went to Hot Springs, Va., where she remained several months. After this she had no pain for fifteen months but did not seem to gain or to improve in health. In September, 1896, in Italy, the pain returned. The attacks recurred with great regularity for seven or eight weeks. Most of them were attended by nausea and some by vomiting. She became jaundiced for the first time in December, 1896, and has remained more or less icteric until admission. Just after the paroxysms the icterus is deeper. For the past five months she has remained in bed most of the time. She vomits frequently, is seldom free from nausea. The bowels have not been markedly constipated; appetite is poor; headaches occasional but not severe. Prior to this illness, however, she suffered very much from headaches. At no time has she had chills or sweating.

Examination. — Patient is quite deeply jaundiced; her color is a dark slate-yellow; tongue heavily coated; body much emaciated; expression rather dull, eyes lustreless. Heart not enlarged; no adventitious sounds. Lungs negative. Urine dark, almost coffee-colored, trace of albumin, much bile-stained sediment. A few bile-stained casts and epithelial cells. Red blood corpuscles, 4,220,000; white, 6,000.

May 4, 1897. *First operation.* — Longitudinal incision through right rectus muscle; resection of cartilages of eighth, ninth and tenth ribs because the common bile-duct was very inaccessible. Choledochotomy; removal of one small mulberry calculus. Exploration of duct fails to detect a second stone. Suture of duct wound. Gall-bladder atrophied and not opened. Bismuth gauze packing to suture in duct. Peritoneum sutured with fine silk, muscles and fascia with silver wire, and skin with a buried suture of catgut. Little or no shock from the operation.

On opening the abdomen the tissues were bile stained. There was no fluid in the peritoneal cavity. The outer surface of the contracted gall-bladder was covered with new connective tissue in which were little masses of fat. The omentum was loosely adherent to the gall-bladder. The cystic and common ducts were easily isolated after division of three of the costal cartilages. No stones could be felt in the bladder or cystic duct. The stone found in the common duct could be moved quite freely up and down in this duct, but could not be forced into the cystic duct, the common duct, about 1½ cm. in diameter, being uniformly dilated. Bile flowed from it when opened. It was carefully explored with the fingers but not with an instrument. The gall-bladder was not opened. Two mattress sutures closed the opening in the duct, one preliminary suture being taken before the duct was opened. The sutures were passed without difficulty, the wall of the duct being about three mm. in thickness. No leakage occurred after the stitches were tied. The calculus, without facets, was spherical, about 1.6 cm. in diameter, and had a granular surface like a mulberry calculus.

May 15th. Patient has recovered uneventfully from the operation. She is easily nauseated, however, and has very little desire for food. The stools have about the color of dark coffee and the skin has become lightened perceptibly. She complains, however, of an aching pain in the back, not relieved by posture.

May 24th. Patient has no inclination to eat. Takes almost nothing by mouth. Nutritive enemata, which have been administered uninterruptedly since the operation, are still well borne. About every two days there is a quite definite attack of pain in the umbilical region and back, ushered in by nausea. Vomiting usually follows in a few hours and the distress is relieved.

May 29th. Condition little changed. Patient is fairly comfortable except for the attacks. Takes a little more food. Stools semi-solid and still quite dark. Urine has trace of bile.

June 13th. No bile in urine. Vomitus contains considerable hydrochloric acid.

June 26th. Appetite and digestion have steadily improved. Nausea less constant, often absent. Patient constipated, requires enemata, stools normal as to color.

July 4th. Much more comfortable. Nausea has disappeared; color greatly improved, but the attacks of pain continue although they are less frequent.

July 13th. Slight chill at 5.30 P. M., accompanied by pain in the back and head. Temperature reached 103° at 7.30 P. M.; fell to 99.2° at 5 A. M. Examination of blood for malaria, negative.

July 25th. Patient has lost one and one-half pounds in weight in the past week. The right lobe of the liver is enlarging. The spleen is palpable. Patient is having short attacks of fever accompanied by slight chills; headache and yawning usually associated with them. The attacks of pain continue; they are still controlled by very small doses of morphia, one-sixtieth to one-fortieth of a grain. She sits up out of bed most of the time.

July 27th. The pain in the back has of late been accompanied by a slight rise of temperature, 99.2° to 105.5°. The urine contains no bile. The stools consist of light and dark portions sharply separated. Patient is gaining quite rapidly in weight.

August 5th. Stools clay-colored. Temperature reached 102° last night during an attack of pain. Skin is becoming icteric, urine contains bile; slight pruritus. Patient's weight has increased five pounds in ten days. From August 8th to 12th no bile in urine.

Sept. 12th. The attacks of pain and the pyrexia continue. Patient is decidedly icteric after some of the more severe attacks. What we have feared ever since the operation we are now quite certain of, namely, that there is still a stone in the common duct, probably in Vater's diverticulum. The liver is considerably enlarged but the gall-bladder has not been definitely made out.

September 13th. *Second operation.* — Vertical incision near linea alba. Adhesions from previous operation separated without much difficulty. Liver much enlarged, gall-bladder and common duct distended with bile. The wall of the common duct was much thicker, the wall of the gall-bladder, on the other hand, was probably thinner than at the previous operation. A small stone was palpated deep down behind the duodenum, presumably in the ampulla. The line of the old suture in the ductus choledochus could not be very definitely made out, but a short yellowish-white streak, evidently cicatricial tissue, corresponded, I thought, to the site of the original slit in the duct. A fine suture was placed in the common duct to serve as a handle for the subsequent manipulations. The duct was opened, and about 60 c. c. of clear greenish bile escaped. A gauze plug was inserted into the proximal end of the slit to prevent the stone from slipping into the hepatic duct. Interrupted sutures were then taken over a hammer of the proper size. The dislodgment of the stone was somewhat difficult. It was a little smaller than the first stone, but otherwise repeated the original exactly. The gall-bladder was opened, sewed to the peritoneum, and drained in the usual way; a rubber tube surrounded first by gauze and then by protective being held in place by a purse-string suture of catgut. Wicks of bismuth gauze

protected the line of suture in the common duct. The operation was attended with very little shock and the patient reacted very well.

Sept. 20th. There has been more or less nausea ever since the operation. Patient objects decidedly to stomach washing. Bile is draining actively from the tube. There has been little or no nausea to-day, but patient is weak and much depressed. The removal of a piece of gauze from the gall-bladder gives patient the first sensation of "heart-burn," which she has had since the operation; it lasted several hours.

Sept. 22d. Patient is thin and emaciated and alarmingly weak; speaking is a great exertion to her. Temperature subnormal. There are no wound complications, nor any signs of peritoneal irritation or obstruction. Alimentation is almost exclusively rectal; 6 P. M., vomited 1,000 c. c. of fluid thick with "coffee grounds." Patient very restless. Examination of vomitus: No bile; blood corpuscles abundant; altered blood pigment; free hydrochloric acid; no lactic acid.

Sept. 23d. Patient has vomited several times during the day; in all about 2,000 cm. of the same dark coffee ground vomitus. The pulse is very feeble.

Sept. 24th. 8 A. M. Pulse barely susceptible early this morning; rallied a little after exhibition of salt solution per rectum. Still vomiting large amounts of same fluid, though nothing is being administered by mouth. 12 M. Patient is very low but still conscious. Infusions of salt solution were given under breast and in buttocks. 5.15 P. M., one drachm of one per-cent. solution cocaine given by mouth. 5.30 P. M., patient vomited 360 c. c. of same dark fluid. Cocaine given again. No vomiting since second dose.

Sept. 25th, 1 A. M. Patient responds a little to the saline infusions. She is moaning and restless. Her nose and extremities are cold. She sleeps in short naps, with her eyes open and eyeballs rolled up. Complains greatly of thirst. Champagne and albumin retained and apparently relished.

Sept. 28th. Infusion again soon after midnight. Involuntary stools and small amount of dark vomitus. Is somewhat flighty at times. Pulse is thready, irregular, and cannot be accurately counted. She is sighing and seems almost moribund. Too weak to recognize surroundings or members of the family. About noon to-day I saw the patient for the first time since the third day after operation, having returned to town as rapidly as possible in response to a telegram sent forty-eight hours ago. Dr. Cushing, house surgeon, who had attended her constantly, day and night, met me at the door of the hospital with the words "no hope, she is dying." We went to her room; she was cold and almost unconscious; her eyes were open, the eyeballs rolled up; the lower jaw had dropped. She had had more involuntary movements and could retain no nourishment. Her pulse was little better than a flutter and could not be counted. In less than forty-five minutes I returned to the patient and found her pulse 120, and fairly regular in force and rhythm. I doubted my senses when I counted it. She was moreover not so cold, her eyes were not staring, and her lower jaw was raised. A miracle! From that moment her convalescence was uninterrupted. She slept an hour, and on waking looked better than she had in two or three days. For twenty-four hours she was so weak that she could barely move her arms. She remembers nothing that transpired on the 23d, 24th and 25th of September.

In eight weeks, on November 22d, this patient left the hospital, not only able to walk but to take a long journey on the railroad. In one period of seven days she gained nine pounds. Her liver was rapidly diminishing in size.

In April, 1898, I had the pleasure of seeing this patient again. Her color was natural, her digestion excellent, her weight above normal and her strength steadily increasing. Her liver did not extend below the costal margin.

I have seen many cases regarded as hopeless recover, but never a being so near death as this have I known to escape it. I have speculated much as to the possible explanation of the very sudden change in her favor, but it would lead us beyond the limits of this paper to discuss the matter. In toxemias I have noted almost instantaneous drops in the pulse rate. Twice within a month I have observed a fall of 30 beats to the minute follow in less than thirty seconds the opening of an abscess. The abscesses were large and very acute; one was a suppurating laparotomy wound and the other was a circumscribed abscess in the peritoneal cavity. The very instant that the abscesses were opened the change in the pulse was noted. A few months ago we were preparing to infuse with salt solution a patient upon whom I had operated for gall-stones and whose condition gave me not a little anxiety. His respirations were about 40 per minute and his pulse between 130 and 140. The physical signs indicated not very clearly some consolidation of the lower lobe of the right lung. While the instruments were being sterilized for the infusion, and while Dr. Cushing, the house surgeon, was counting the pulse, it fell to less than 100.

Was the hemorrhage from the stomach in the case of Mrs. R. (Case V) due simply to the prolonged vomiting; or to interference with the circulation of the portal vein (liver cirrhosis, pressure of packing); or to thrombosis of a small arterial branch; or to a retrograde embolism (Recklinghausen,[11] von Eiselsberg[12]) or malposition of the pylorus or duodenum? It could hardly have been due to sepsis. As long ago as 1867, Billroth[13] remarked that in septic cases we might have duodenal ulcers and fatal hemorrhages therefrom. He showed in his experiments upon animals that sepsis might cause intestinal hemorrhage, although, in his experience, it seldom did so in man; if, however, there existed an obstruction to the circulation, such as liver cirrhosis causes, little hemorrhages in the stomach plus the action of the gastric juices might lead to the formation of ulcers. The nausea began almost immediately after the operation. Whatever was the cause of this almost continuous nausea and frequent vomiting was also, at least, the remote cause of the hemorrhage. Von Eiselsberg has just reported seven cases of stomach and duodenal hemorrhage following operations upon the abdomen. Hematemesis occurred in six of his cases, and never later than the second, usually on the first day. The hemorrhages were demonstrated in three cases post mortem.

In my case the vomiting of "coffee grounds" was not observed until the tenth day. This patient was so carefully watched that I am quite sure that if hematemesis had occurred earlier it would not have been overlooked. In seeking for a common cause for the stomach and duodenal hemorrhages, von Eiselsberg excludes vomiting because in two cases there was no vomiting, and in two, hematemesis occurred only a single time; he also excludes sepsis because in four of the cases there was no infection, and reaches the conclusion that "If the behavior of the wound is to be regarded as the cause of the hematemesis, then it must be assumed that in the cases which healed by first intention a retrograde embolism from a non-infected thrombus had taken place."

[11] Die Storungen des Blutkreislaufes.
[12] Die Verhandlungen der deutschen Gesellschaft für Chirurgie, 1899.
[13] Ueber Duodenalgeschwüre bei Septicaemie. Wiener med. Wochenschr., 1867.

I wish that there were time to discuss this feature of the case more fully, but I must pass on to the consideration of another fact which this remarkable case developed. There were at the first operation almost certainly two stones in the common duct, one in the ampulla, the other more or less freely movable in the duct, although it fitted it quite snugly; but the gall-bladder was small and contracted and not opened, and the liver was little if at all enlarged; the color of the skin was a light slate-yellow or ash-yellow — not the darker bronze-yellow of complete obstruction. At the second operation, however, when there was only one stone in the common duct, the gall-bladder was distended with bile and quite large, and the liver was greatly enlarged, its right lobe almost reaching the crest of the ilium. The patient's color and symptoms indicated that the stone in the ampulla did not at all times obstruct the duct completely. It sounds almost paradoxical to say that the removal of a stone should increase the obstruction, or that the one stone plugged the duct more completely than the two. I believe that a stone in the diverticulum, particularly a small one, is more likely to block the duct effectually and to lead to distention of the gall-bladder than a stone, however large it may be, elsewhere in the common duct. A stone in the middle of the duct may at first occlude it completely, but the duct-wall soon becomes infiltrated and thickened, it loses its elasticity, and, when distended with bile, stretches. The stone no longer plugs the duct tightly and bile trickles by into the intestine even when a second stone occupies the diverticulum, but when the proximal stone is removed, the bile instead of trickling up to the distal stone is probably jetted against it with sufficient force to hold it as a ball-valve. In 1885 I operated upon a patient whose common duct contained a stone larger than the largest pecan nut; at times one half of this stone projected into the duodenum, the other half occupied the duct; a flange had been cut on the calculus by the cicatricial ring, which engaged it and prevented it from slipping into the intestine; and yet this patient was so very slightly jaundiced that a stone in the common duct had not been suspected.

Case VI. Miss M. H., age thirty. Transferred to surgical from medical side January 27, 1896. Indigestion for eight years. For past four years the "gastric distress" has been very great. Patient describes a "gnawing sensation" in the epigastrium. Colicky pains radiated throughout thorax, but were at times very severe "in the back." Two years ago she had typhoid fever. For the past six months she has had frequent definite sharp gall-stone attacks with nausea, and four times with vomiting. Never blood in the vomitus. No chills, fever or jaundice. Patient is a confirmed invalid. She suffers from headache and occasionally from vertigo.

Examination. — Abdomen flat. On deep inspiration spheroidal tumor is to be seen just below the costal margin on the right side. This tumor can also be felt. It moves with the enlarged liver, ascending and descending with the respirations. Last September patient first began to have attacks of pain in right hypogastrium, and accompanied by nausea and sometimes by vomiting. Spleen not palpable. The severe pain suffered by patient could be relieved by drawing up the knees. This pain radiated to the right shoulder-blade.

January 28, 1896. *Operation.* — Cholecystostomy. Vertical incision through the right rectus muscle. Elongated right lobe of liver. Very dense fibrous adhesions between the gall-bladder and duodenum. These adhesions were divided with great difficulty, and finally what appeared to be gall-bladder presented. It was aspirated, and a thick, greenish fluid withdrawn. It was consequently opened with some confidence, but proved to be duodenum. It was sutured again at once, the suturing being very difficult because the muscular coat had been separated from the submucous coat during the dissection of the adhesions. The muscular coat, owing to the chronic inflammation which had existed for so many years, had become sufficiently fibrous to resemble cicatricial tissue, and consequently was unintentionally stripped from the submucosa. When the submucosa presented, it did so in the form of a little knob-like bladder, this coat resembling almost precisely the wall of the gall-bladder. The gall-bladder was finally found, deeply imbedded in adhesions, about four cm. to the right of its usual position and far under the enlarged liver. It was opened and one large oval stone, two cm. by one cm., removed. In the course of the operation a small abscess was discovered in the midst of the adhesions. Patient's recovery was considerably retarded by digestive disturbances, which finally disappeared completely.

April 1899. Patient says that she is in robust health and wishes to become a masseuse.

Case VII is unavoidably omitted.

Case VIII. *Discharge of pus and blood by mouth and rectum during severe gall stone attack. Two years later adhesions so extensive and so dense that the common duct was reached by a retroperitoneal route, over the right kidney.* — Mrs. M., age thirty-five. Admitted March 1895. No typhoid fever. First attack of gall-stones, six years ago, began with sharp attack of pain in the right side of the abdomen. Two years ago miscarriage at seventh month; was ill in bed thereafter four months. While in bed patient had great pain in region of gall-bladder, with high fever, for ten weeks; was continually blistered over liver. Eight weeks after the abortion she felt suddenly something "give way"; this giving way was followed by great relief, and by horribly offensive discharge of pus and blood from the rectum and mouth. These discharges were irritating, gave her a very sore throat and mouth. She spat blood and matter for two or three weeks, and the stools during this time were very offensive. She has had pain and tenderness constantly with occasional severe attacks since this time; has been jaundiced more or less ever since, but more markedly so since last July. On admission, body jaundiced and greatly emaciated; tenderness over the entire abdomen, especially in the region of the gall-bladder. Liver, in deep inspirations, extends two fingers' breadth below costal margin, and has a fairly sharp edge. Spleen palpable; stools acholic.

March 19th, 1895. *Operation.*—Liver small, barely reaches costal margin; its high position complicated the operation. Colon adherent to liver by rather loose bands; gall-bladder exposed when these were divided. It was high up under the liver and no larger than the tip of the little finger; it was not opened. Adhesions were so dense over the common duct that the peritoneum was opened over the right kidney, and the common duct approached from behind under the peritoneum. A stone being felt, the common duct was the more readily exposed; the stone was extracted through a hole made by ulceration. This hole proved to be at the junction of the duct and the duodenum, and was shut off from the peritoneal cavity by very delicate adhesions. The intestinal part of the opening was closed completely, the duct part as well as possible. The sutures were passed with great difficulty. The opening in the duct could not be completely closed, the tissues being necrotic, and bile escaped through it even after the sutures were drawn tight. Probing of the duct was carefully done. No other stones found.

October, 1895. Six months after operation, patient is very well. She weighs one hundred pounds.

April, 1899. Examined in my private office: patient still enjoys perfect health; she now weighs one hundred and ninety pounds. Patient states that she has recently given birth to a healthy child.

I report the case of this woman (Case VIII) because (1) she was so very ill when operated upon; (2) it is one of the two cases in which intestinal perforation had undoubtedly occurred prior to operation; (3) the com-

mon duct was approached in a new way, namely, from behind the peritoneum; (4) the stone, in the ampulla, had ulcerated through the walls of the ductus choledochus and the duodenum, and would perhaps soon have been extruded; (5) the increase in the weight of the patient seemed phenomenal; it was almost doubled in the year following the operation.

What the result to the patient would have been if this stone had ulcerated its way out of the common duct is quite certain, and yet I have several times found stones imbedded in adhesions outside of the bile passages; they were usually close to the gall-bladder. Once I discovered a stone in the wall of a thick-walled gall-bladder; it was completely buried and was causing no disturbance, and was discovered in the process of sewing in the drainage tube. This is, I believe, the only case in which I have not divided all of the adhesions encountered. If no contraindication exists, such as necessity for abbreviating the operation, we should separate the adhesions if possible. The chance of meeting fistulous openings between bile passages and the intestine I regard as an indication for thorough exploration rather than a contraindication to it. Not infrequently adhesions alone are responsible for the symptoms which persist after the calculi have been removed by the surgeon or have escaped in other ways.

UNLOOKED-FOR DYSTOCIA IN CERTAIN MULTIPARÆ.[1]

BY E. S. BOLAND, M.D., SOUTH BOSTON.

IF this title is ambiguous or misleading I shall try to explain it as I go along. It is difficult to develop any new fact or plausible theory in obstetrics when the entire field has been gone over so often and so thoroughly by competent writers of large and varied experience. But some accepted facts will bear repeating, and mooted points, if not settled, are better understood by new discussions. I have found difficulties with which I was not familiar, and I shall try to state these difficulties and earnestly solicit your discussion and help.

We are occasionally called to attend in labor women who have already been delivered of from one to several children, and as they got through with these deliveries without special delay or trouble we unhesitatingly accept their cases. Their first deliveries may or may not have been slow, and some later ones may have been precipitate. It is not unusual to be told in such a case that the child had been born before the doctor reached the bedside. Under such circumstances we have no misgivings about the patient's condition nor prospects, and may not even examine or estimate her pelvic measurements; hence, when later we encounter delays and difficulties in delivery, we can certainly regard them as "unlooked for." Why should delivery have been rapid and easy formerly and so impossible now? When called to such a case, if we examine digitally we find the cervix high up and but little dilated, even after some hours of ineffectual pains. We watch the patient awhile, encourage her to be patient, and possibly give an opiate. The pains, though frequent enough and severe, seem to be singularly inefficient, for the head does not engage, much less descend. If after some time we examine again we shall probably find some relaxation of the vagina and a fairly dilated (or easily dilatable) os, and the head or possibly the breech within reach, quite movable, if the waters are still intact, and no attempt at engagement in the inlet or of the necessary moulding essential thereto.

After many hours or even days so spent we find the patient getting anxious and urgent for relief, and with the pulse and temperature rising, and other evidences of exhaustion, we begin to realize that for safety of the mother, as well as for the baby, something more than masterly inactivity is demanded of us.

When we look for the determining cause in these cases it is very hard to find. The history of former easy and possibly prompt deliveries excludes any great departure from normal in the parturient passages, bulky neoplasms of course, being excluded. It has been suggested that possibly there is persistent at term the globose shape of the gravid uterus which is normal up to six or seven months, instead of the ovoid shape that ought to obtain in the last weeks of pregnancy. If this assumption is correct it would explain the arm or trunk presentations occasionally seen. In most of the cases that I recall the usual polar presentations of head or breech could be easily felt. Sometimes the head seemed to rest on a veritable shelf formed by the os pubes (as a bracket) and the expanded anterior uterine wall.

The most plausible theory of the origin of these cases is based on the fact that in multiparæ we so often find relaxed abdomens and presumably some fault of direction of the uterine ovoid, or failure in contraction in the uterine walls in consequence. We have no doubt this same condition may occur in primiparæ, but in any given case when it is suspected, we must first exclude the more common causes of dystocia, under sacral promontory prominence, narrow superior strait or uterine inertia. If these are excluded we probably have to deal with the same condition primarily which we are assuming is a vicious development in the multipara from some weakening or aberration of originally competent normal forces. However, the occurrence of the difficulty is certainly rare in primiparæ as compared to multiparæ. In two of my cases the development of large mural fibroma seemed to be the cause of breech presentations but neither gave special trouble to the artificial delivery of living children.

Frequency. — In this condition it is not possible to give exact figures as to frequency, clinical varieties as to positions of head or breech, or infant mortality. Excluding doubtful cases occurring in first labors, I doubt if they occur more than once in 150 or 200 cases. This is merely an estimate from my own experience.

Treatment. — Aside from operative interference the treatment is unsatisfactory, and can best be expressed in negatives. Don't hurry; don't give ergot; don't rupture the waters (twins being excluded); don't keep the patient in bed at first, or out of it later; don't fail to empty the bowels and bladder at intervals; don't insist on the patient making expulsive efforts unless the abdomen is manipulated so as to direct the uterine ovoid, especially if the abdomen is pendulous. Usually after many hours have been wasted in these attempts, little will have been secured except possibly greater ease of dilating the soft parts, but your patient will be in poor state to meet the exigencies of artificial delivery. But meet it she must, for we are now face to face with the old problem of high forceps or turning.

That penitent darkey at the camp meeting who, when the fervid though illiterate preacher described

[1] Read before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, October 25, 1899.

the only two roads open to him as one leading to sure destruction and the other to perdition, said, "I'll take to de woods," about expresses our feelings in our choice of these two means of relief, only we have no woods for our escape. Sometimes the choice is made for us by circumstances. If breech presents, no one would attempt cephalic version. So, too, if arm or trunk presents, the feet had better be brought down. Turning will not be found difficult in these cases. If the head presents, the tentative use of the forceps promises most if used judiciously and coincidently with suprapubic help from an assistant to depress and steady the head after first attempting, *per vaginam*, to secure favorable position of the head in relation to the inlet and complete flexion also. The chances for success will be better for thorough preliminary manual dilatation of the vagina and cervix. That complete surgical anesthesia is best none will deny, and much as I believe in chloroform for ordinary obstetric use, in these cases ether is the better choice. While podalic version is relatively easy in these cases, extraction is very difficult; the arms are pretty sure to get extended over the head, and the danger of delays in the after-coming head, always a source of danger, is especially so here. With high forceps even the most careful attempt to secure the head in favorable relations to the blades of the instruments and the diameter of the pelvis, and to drag it through unmoulded by its normal influences is even more severe on the mother than are the manipulations coincident to turning and extraction. Either in turning or high forceps the difficulties and dangers are greater if the patients are fat, and they often are.

The infant mortality is high in either case — too high in these days of trained abdominal surgeons and so commonly accessible hospitals. I believe that a Cæsarean section would be much safer for the child, and practically as much so for the mother, than delivery artificially, *via naturalis*. I have one or two cases in mind in whom, should pregnancy again occur, I shall urge laparotomy. Of course it will be declined, but my conscience will be relieved. The fact that temporizing sometimes leads to unexpected and very happy terminations in these cases, or cases so nearly like these in all clinical respects as to be indistinguishable, makes us all — doctors and parturients alike — willing to wait and take risks.

The risk to the mother in these cases is not great or we could better urge the seemingly greater operation of suprapubic delivery. If we direct our turning or forceps delivery with the aseptic care the gynecologists have taught us, and care for her afterwards with antiseptic precautions, it is surprising what an amount of mechanical abuse the parturient canal will tolerate.

RÉSUMÉ.

(1) Certain multiparæ, after one or more easy deliveries, lose the power of natural parturition.

(2) This is due to failure of the expelling forces in the uterus and abdominal walls.

(3) Artificial delivery is imperative in such cases as promptly as a diagnosis is established.

(4) Infant mortality is high in artificial delivery by the natural passages.

(5) The human female is very tolerant of aseptic mechanical genital injuries.

(6) Is suprapubic delivery justifiable in these cases when a positive diagnosis is established?

A CASE OF EXTRAPERITONEAL NEPHRO-URETERECTOMY FOR TUBERCULAR DISEASE.[1]

BY EDGAR GARCEAU, M.D., BOSTON,
Surgeon to Out-patients in St. Elizabeth's Hospital, and in the Free Hospital for Women.

The reason of reporting this case in full is that a considerable length of time has elapsed since the operation was performed. As our knowledge of similar cases is rather meagre, owing to the obscurity in which the diagnosis of them is usually veiled, any contribution to the subject would seem to be of value. The present case had been treated for months as a simple chronic cystitis of an unknown etiology, which had resisted treatment, and there had been no positive sign or symptom sufficiently marked to attract attention to the suppurating kidney which was the principal seat of disease. It also illustrates very well what all observers engaged in this work must have early recognized, namely, that chronic cystitis in a young unmarried girl, who has not been exposed to the usual sources of vesical infection — the catheter, purulent genital affections, etc. — is usually tubercular.

The patient was twenty-two years old, unmarried, and earned her living by dressmaking. She was first seen in September, 1897. Her family history was negative. She herself had always been well. Examination of the various organs of the body, except the urinary organs, was negative. There had never been any purulent affection of the genitalia, such as endometritis or vaginitis, nor had she ever been catheterized in sickness. She dates her trouble from an event which happened in 1896, a year before she came under observation. At that time she lifted a heavy girl, and immediately felt a severe pain in the left lumbar region. Since that time she had been ill. The principal source of discomfort was frequent painful micturition, on some days the frequency reaching so many as forty times in the twelve working hours, and six times at night. The pain during micturition was felt in the urethra, and was at times very severe. There was at all times a constant desire to urinate, which is in these cases the cause of the nervous and physical breakdown rather than the disease itself. Emaciation was rapid, and there was a gradual loss of strength; yet she was able to work at her dressmaking up to within two weeks of the time of her operation. Pain in neither lumbar region since the time of the strain had been complained of, but there was some backache, confined to the spinal region; there was also some pain at times in the left iliac region, and later lying on the left side was painful. She gave no history of previous renal colic.

On October 6, 1897, a cystoscopic examination was made, with the following result: Whole bladder red and inflamed to an intense degree; flakes of fibrin here and there; wall of bladder corrugated, owing to bands of white cicatricial tissue, especially prominent about the site of the left ureteral orifice. The right ureteral orifice was found with difficulty, and a catheter inserted into the ureter. The left one could not be positively identified, although a catheter entered an opening in the vesical membrane for about two centimetres, at which point further entrance was impossible, owing to a stricture of the ureter. Small ulcerated areas were numerous throughout the bladder, but no miliary tubercles were seen. The left kidney was pal-

[1] Read before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, October 25, 1899.

pated, and was found to be twice as large as the right one; palpation was somewhat painful, and there was some rigidity of the abdominal muscles over it. The left ureter was examined through the vagina, and was greatly enlarged, being at least three or four times as large as the right one. The uterus and appendages were normal. The urine drawn from the right kidney showed 2.4 per cent. of urea and some albumin, due to effused blood; the sediment consisted of blood corpuscles, a few granular casts, numerous small round epithelia, and a few leucocytes and pelvic epithelia. The bladder urine, drawn while the catheter was in the right ureter, showed 1.84 per cent. of urea, and the sediment consisted of pus chiefly, with a few casts and various epithelia, mostly fatty. No tubercle bacilli were found after careful search, but at a previous examination which was made two weeks before one doubtful tubercle bacillus was found after two hours' search.

A diagnosis of pyelonephritis was made from the following data: Absence of previous purulent affections of the genitalia in a young unmarried girl; elimination of catheter infection; cystitis of long duration; resistance to ordinary treatment persisted in; gradual deterioration of health; localized renal signs of inflammation; enlargement of the kidney.

Nephrectomy was performed on October 25, 1897. The ureter was not removed at this sitting, as it was hoped that it would atrophy. The mistake was made of burying the tuberculous ureteral stump in the tissues and closing the incision over it. Subsequent events showed that it would have been better to have secured drainage or to have removed the ureter with the kidney, but at this time a positive diagnosis of tuberculosis had not been made, so that there was some excuse for burying it. It is a question, however, if she could have supported the combined operation in her weakened state; and the ease with which the ureter was found at the second operation was an argument in favor of performing the operation in similar cases in two sittings. Realizing the possibility of having to remove the ureter at the first operation, the incision was made with that end in view. It started just below the twelfth rib at the border of the quadratus lumborum muscle, and continued onward to the tip of the rib; from there it descended to a point just behind the anterior superior spine of the ilium. This incision gives ample room. There were no adhesions except a few along the course of the descending colon. The peritoneum was opened once, but the rent was closed and no harm resulted.

On November 14th there was a sharp rise in temperature, and some pain was complained of in the left lumbar region. The wound had healed by first intention. Thinking that the stricture of the ureter might have become temporarily occluded, and that there was an accumulation of pus above it, an attempt was made to pass a catheter into it, without success. It was noted that the bladder was already looking much healthier. On November 24th, there was no doubt about the nature of the trouble, for local signs of deep-seated inflammation at the point where the ureteral stump was situated made it evident that further operative interference was in.perative. Ether was therefore given again, three weeks after the nephrectomy, and an incision made parallel with the quadratus lumborum muscle, starting at the twelfth rib above and continuing down to the iliac crest; thence it was prolonged to the anterior superior spine. The peritoneum was pushed aside and was not opened at all during the whole course of the operation. The ureter was met with just below a mass of inflammatory tissue, in which the upper end of it was imbedded. In the centre of the mass was a small abscess, which was drained with a tube and gauze. The ureter was freed from it, and the dissection of its whole length from the kidney site to the bladder begun. When the dissection reached the lower angle of the incision, in order not to expose too large a surface, the upper three inches of the incision were closed, leaving the drains protruding from the upper angle. The incision was now prolonged below, from the point at which it left off, to within about three inches of the middle of the symphysis pubis, following Poupart's ligament, and an inch above it. The dissection was now carried on to the point at which the ureter goes below the uterine artery. Now the forefinger of the left hand was passed into the vagina (the patient having been put into Trendelenburg's posture), and along it as a guide was pushed a long pair of straight scissors, closed. The tip was plainly seen from the abdominal side pressing against the vaginal wall, which was fully exposed. An incision with the knife was next made, large enough to allow the scissors to enter. It was dilated by expanding the scissors on withdrawing them. The ureter was then pulled through the opening with a pair of long forceps, and the opening through the vagina closed with catgut from the abdominal side. Some brisk bleeding was easily controlled. The long incision through the abdominal walls was now closed in three layers, and the patient was then put into the dorsal position. A considerable hemorrhage, venous in character, was found going on in the vagina, and undoubtedly from the vaginal vein. Mention is made of this because it should be guarded against, as it may occur, as it did in this case, without the knowledge of the operator, owing to the position of the patient. Some trouble was experienced in securing the divided vessel. The ureter was then dissected out of its bed in the vaginal wall down to its termination in the bladder, where it was finally tied off with catgut; the stump was cauterized with the Paquelin cautery, and a few stitches taken in the vaginal wound. The patient stood the operation fairly well. There was considerable shock.

The ureter was enlarged throughout its course to five times the normal size. It was hard and gristly, and white in appearance. Sections of it showed characteristic tubercular changes.

The kidney was examined by Dr. P. Leary, who reports as follows: "On stripping the capsule several prominent, rough, yellowish areas appear from one-half to one centimetre in diameter, made up of many opaque pin-head swellings. On section into the kidney, much reddish-yellow, purulent material escaped from the dilated pelvis. The papillæ are everywhere blunted, in places are excavated deeply, so that but one-half a centimetre of kidney substance is left beneath the kidney capsule. The pelvic mucous membrane is everywhere ulcerated, grayish red, and ragged. The mucous membrane of the ureter is granular, injected, and shows small, ragged ulcerations. The ureter is dilated and its wall considerably thickened. The cavities in the kidney substance, which are continuous with the pelvis, are lined with a ragged, yellow, opaque membrane, surrounded by a

grayish gelatinous zone. From the excavated areas the process has in places extended through to the surface in the form of long, narrow, yellow lines, corresponding to the distribution of the collecting tubules, and causing the lesions described on the surface. The glomeruli show as injected pin-point areas. The lower and anterior portions of the kidneys show the oldest process, the kidney substance being completely honeycombed. In the walls of one of the cavities is a mass of calcified material. Smears show abundant pus, lymphoid and epithelial cells in the contents of the pelvis. Tubercle bacillus not found. Cultures show a few colonies of staphylococcus albus on the surface and a few streptococci in the water of condensation. Frozen sections from the injected cortical portion show typical tubercles containing giant cells, and many areas of caseation. Diagnosis, chronic tuberculosis of the kidney."

The patient did badly after the operation. The incision opened in three places and pus was discharged for a long time. Finally improvement began, slowly at first, and in three months she left the hospital, convalescent, but with a large fistula with three outlets. At the end of nine months only it closed. No hernia resulted, which was remarkable in view of the extent of the incision and the long-continued suppuration. Improvement on the part of the bladder followed immediately after the operation; urination was reduced to six times by day and twice by night, and the act was painless. In July, 1898, she was urinating only three times each day and once at night. She was then looking well and had gained in weight. In September of the same year she was again at work at dressmaking and considered herself well. Urination was necessary only three times each day and once at night. There was no pain. The vaginal wound had long since healed.

In May, 1899, there was a return of the vesical symptoms. Urination had become somewhat painful and she had to empty the bladder seven times by day and once at night. A cystoscopic examination without ether showed that the bladder was considerably inflamed; so it was deemed best to give ether again and cauterize it with the solid nitrate of silver stick. This was done on May 31st of the present year. At that time the condition of the bladder was as follows: The mouth of the right ureter and the ureteral eminence were very red and granular looking and the resemblance to fine granulation tissue was marked. The left ureteral eminence and orifice were quite smooth and relatively paler than the surrounding tissue. The whole bladder except the extreme fundus was granular looking; bled easily on touching; here and there were scars where healing had evidently taken place.

The method of cauterizing the bladder deserves a word of comment. It was carried to such an extent that when completed the appearance of the whole bladder resembled a diphtheritic membrane. No fear need be felt for the safety of the patient, for the cauterization appears to be confined to the superficial layers of the mucous membrane. The sloughs are thrown off in a few days, and the great improvement which follows is in favor of a further trial of this method of treating these cases. So far as the author knows, this method of treatment carried to such an extent is original with him. In another case of vesical tuberculosis this cauterization was performed with similar gratifying results.[1] While the patient was under ether a catheter was inserted into the right ureter. The urine drawn showed 2.14 per cent. of urea, and the sediment consisted of a few granular casts, some caudate epithelia, a few blood corpuscles and leucocytes; no tubercle bacilli were found. A guinea-pig was inoculated with a small portion of the sediment and urine. It was killed in six weeks. The autopsy showed healthy organs. It seems fair to conclude, therefore, that the right kidney has remained healthy after nearly two years. It is perhaps worth mentioning that the kidney has become movable, possibly on account of its increased weight, due to compensatory hypertrophy, but it gives rise to no symptoms. A pig inoculated with urine drawn from the bladder died in thirty-seven days of unknown cause, as on autopsy nothing was found which accounted for its death. This brings up the question of the value of the guinea-pig test. It may be said that the value of it has not yet been determined. A positive reaction is conclusive, but a negative reaction is not to be considered as proof that tuberculosis does not exist, as the present case illustrates. More might be said on the subject, but it does not come within the scope of this paper.

The patient was last seen on October 25, 1899. She was then in excellent health. The appetite was good; she slept well; was strong enough to do an exhausting day's work, and in all ways considered herself well. Urination was painless; was required only three times a day and not at all at night. The cystoscope showed the following: Whole bladder of normal grayish-white color; here and there, scars of white tissue; a small area of redness, one centimetre in diameter, over the site of the left ureteral eminence, not painful to the touch of the cystoscope; vesical neck and urethra, normal. The catheterized urine showed an acid reaction, a percentage of urea amounting to 2.27 per cent., and the sediment, slight in amount, consisted of a few bladder epithelia, a few blood corpuscles, numerous spores, a few small granular casts and a few pus cells.

The peculiar feature of the case was the fact that only once was a tubercle bacillus, and that a doubtful one, found in the urine, although search was made for the germs on many occasions with persistency. The failure to obtain a reaction with the guinea-pig test, while satisfactory in the case of the right ureter, was not so in the case of the bladder, yet, that the diagnosis was correct was most positively proven from the examination of the organs removed. This experience goes to show how imperfect our methods of diagnosis are as yet. The patient cannot be considered cured so long as pus is found in the urine associated with lesions in the bladder, however slight. Yet the outlook in this case, as in all similar cases, must be considered hopeful. The possibility of a cure must be entertained, and that cure will follow in many cases, if watched, seems a wish about to be realized in the near future, in view of the recent progress in this branch of surgery. It is certain that much good can be done in relieving symptoms and in prolonging life with a degree of comfort hitherto not possible by the employment of other means, and that being so, the surgical interference suggested in this is not only indicated but desirable.

[1] E. Garceau: Cases of Cystitis in Women. Boston Medical and Surgical Journal, July 20 and August 3, 1899.

NOTES ON THE CLOSURE, BY BURIED SUTURES, OF RENTS WHICH IMPLICATE THE ANAL SPHINCTER.

BY A. T. CABOT, M.D., BOSTON,
Surgeon to the Massachusetts General Hospital.

IN the *Johns Hopkins Bulletin*, Volume X, page 1, Dr. Howard A. Kelly describes his method of operating upon a ruptured perineum. The point which he especially calls attention to is the importance of dissecting out and suturing the sphincter ani muscle with buried stitches of catgut.

In looking up the literature of the subject, he finds the importance of thus securing the ends of the sphincter ani has been already alluded to by medical writers, and certainly it is a maneuvre which has been carried out for a considerable time by many operators, who have not written out their experience with it.

For a number of years the writer has used buried catgut stitches for bringing together the divided ends of the sphincter ani muscle, and has applied this method not only to those cases in which the muscle has been ruptured in childbirth, but also to those in which it has been divided in an operation upon deep anal fistulæ. The results have been extremely good. As his technique has differed in some important details from that of Dr. Kelly, the following description of it is given:

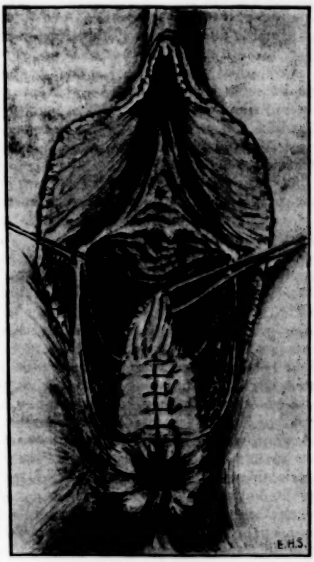
After the perineum, completely ruptured through the sphincter, has been thoroughly refreshed aud the ends of the sphincter have been laid bare, a row of catgut stitches is taken, bringing together the rectal wall, particular care being taken to bring the stitches out exactly on the edge of the mucous membrane, not entering the calibre of the bowel. The outermost of these stitches include the divided ends of the sphincter muscle. When this row of stitches is tied, the rectum is entirely closed off from the wound and we have left a surface resembling that of a rupture of the perineum of the second grade, in which the rectum is not involved. A second row of buried catgut sutures is then taken, and with these stitches the ruptured pelvic fascia, the levator ani muscle and the ends of the transverse perineal and sphincter vaginæ muscles are drawn together. In this way a solid perineal body is constructed. Three rows of stitches are often used in accomplishing this.

Finally, the mucous membrane of the vagina and the skin surface are closed in. The "purse-string" stitch of Emmet is not infrequently used in conjunction with this method of suturing, in order to still further draw together and consolidate the perineal body. The result of this method has been the construction of a perineum of greater solidity and depth than has been obtained in the writer's hands by any other method. The buried stitches have in no instance given any trouble and the method is one which must commend itself, I think, to any one giving it a thorough trial.

The treatment of the rectal wall described above is very different from that adopted by Dr. Kelly. He approximates the rectal rent "by fine interrupted silk sutures passed on the rectal side, entering and emerging on the mucosa about one centimetre from the margin of the cut." Stitches thus entering the rectum always have the disadvantage that they become infected from the rectal contents, and silk especially acts as a wick and becomes soaked with the fluids that are in contact with the exposed portion of the threads. By the writer's method, the stitches do not enter the rectum at all, but yet draw the mucous membrane snugly together exactly as the mucous membrane of the bladder is approximated by the operation for vesico-vaginal fistula. Results prove that infection from the rectal mucous membrane does not follow this method.

Perhaps the most striking case under the writer's observation was one in which the patient had had for many years a fistular opening on the anterior wall. This was a narrow, but very long fistula, entering the rectum high above the internal sphincter. The fear of incontinence of the bowel had deterred surgeons previously consulted from operating upon this sinus. And, indeed, the discomforts of the fistula had been so slight that this conservatism found ample justification.

For some months before I saw her, a swelling and



This sketch shows the deeper layer of stitches in the rectal wall. The dotted line, showing the exact location of the first stitch, gives an idea of the amount of tissue included in these.

hard induration had been forming about this fistula, and when she came under my observation, she had an evidently malignant growth occupying almost the whole septum between the vagina and rectum. This was removed with a considerable margin of healthy tissue about it. After this thorough removal, the whole perineum and rectovaginal septum, up to the peritoneal fold, had been removed for a distance of at least four inches. The parts were drawn together with difficulty by buried stitches, uniting first the rectal wall and sphincters, then the pelvic fascia and, finally, the vaginal mucous membrane. So much tissue had been removed that the tension was very great and an unusual number of stitches were required to bear the strain. The union was very satisfactory. The bowels were perfectly under control from the time of the operation.

At one point, where the tension was greatest, there was a little leakage and for some time there was a small fistulous opening between the rectum and the middle of the wound in the perineum. This gradually closed until it became so small as to cause the patient no annoyance.

The difficulty of approximation in this case made it a severe test of the buried suture in this form of injury, and the success was greater than might have been expected.

Although the writer's experience embraces many cases of the repair of these injuries in this way, the case just reported is the only one in which the union of the deep parts by first intention was not absolute.

The suture material used in these cases has been chromicized catgut. A small size of the gut (No. 1) is selected and when the strain is great, a double strand is used. This is done because the small gut is notably easier to disinfect and is also quicker to absorb.

X-RAY EXAMINATIONS FOR LIFE INSURANCE COMPANIES.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

The organs to be considered by life insurance examiners in the physical examination of candidates are chiefly the kidneys, the lungs and the heart. Two of these organs — the lung and the heart — are especially open to inspection by the x-rays, and can be thus examined without removing the clothing. In the lungs, for instance, old foci of tuberculosis give rise to abnormal appearances, which can be seen on the fluorescent screen, and yet which might be overlooked by auscultation and percussion, if not near the surface of these organs. It is important for the insurance company to know if such foci exist, because they are a source of danger. Emphysema of the lungs is best recognised by the x-rays; the effects of old pleuritic adhesions may sometimes be seen by this new method of examination, and thoracic aneurisms may be detected in an early stage.

The size and position of the heart can be determined with greater certainty and exactness by the x-ray than by the older methods. Some companies will now accept as risks persons who have certain heart murmurs, but no company would knowingly accept a man who had an enlarged heart, and if this organ is enlarged as the result, for example, of a valvular lesion, or of arteriosclerosis, renal disease, or a fatty muscle, the x-ray examination not only shows it, but shows its certainty and precision.

During the past three years I have on two occasions called attention to the value of these examinations to insurance companies, and further experience with them has strengthened my belief in this recent addition to our methods of studying the chest. There is, I think, no single method of physical examination of the thorax, when properly carried out, that gives such trustworthy and complete evidence of the normal or abnormal condition of the organs in this part of the body as an examination with the fluorescent screen. From the insurance standpoint it is not so much a question of what the disease is, as whether there is or is not an abnormal condition in the chest.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular meeting Wednesday, May 3, 1899, Dr. J. W. Elliot in the chair.

PATHOLOGICAL SPECIMENS.

Dr. Pease showed a stone weighing 1,020 grains which had formed about a hairpin introduced into the bladder by a girl three years before.

Dr. Mixter: This specimen represents parts of a tumor which I removed from the abdomen about five or six weeks ago. This is the history: A woman of about forty-five whom I saw in consultation with Dr. Canfield for abdominal growth. I saw her first about twenty months ago. At that time she had a large abdominal tumor, which seemed to be fluctuating. The abdomen was not only very much distended, but seemed to be coming through the inguinal ring, The diagnosis was made of ovarian multilocular cyst, a part of which had come through the inguinal ring. The patient was admitted to the hospital, but her courage gave out and she left before operation.

About two months ago she was again admitted and I operated. On opening the abdomen, this mass, which I think almost all of the members of the staff thought to be an enormous multilocular cyst, proved to be a retroperitoneal growth, and although the thing was soft and apparently fluctuating, as most of these multilocular things are, on opening the abdomen it was seen that it was a solid tumor made up of a large number of lobes. I was able to dig out this mass. I show it because I believe it is considered as rather an interesting specimen pathologically. There is one of the masses laid open. These had to be dug out from behind the peritoneum, and there were forty-three pounds, I believe, of this mass. I left behind, I should say, half as much more. This has been of very rapid growth in the last eighteen months and it was impossible to get it all out. What is left will continue to grow. The patient made a rapid recovery, and she is now up and walking about very much relieved from the weight.

The interesting thing in the operation was the extent to which the retroperitoneal space was involved by this tumor. The first mass I dug out extended down toward the left kidney; the next came down under the ribs from above. Its shape is somewhat different now. As it came down it looked exactly like a liver. As I suggested taking that out one of my colleagues said: "Don't take that out; it is the liver." It presented a perfectly sharp edge just like the liver and in the position of the liver. After taking out two or three of these masses I went down into the sac outside of the abdomen, the hernia, and enucleated a large mass there, and finally I took out this mass, which could be felt as one hard mass through the abdominal wall. It was different in character from the rest, and as Dr. Whitney will tell you, of different microscopic structure. These masses were some of them lipomata, some fibromata with edema, and this last one almost pure fibroma, such as we have in the uterus, and probably starting from the uterus. The uterus was not seen. Hardly anything of the abdominal contents was seen, and this mass has been removed on account of its size. The patient beginning to show signs of shock, the op

eration was discontinued, and now she is anxious to have the rest removed.

DR. HOMANS: I have had four of these cases, two in men and two in women. Three of them were operated upon. One weighed about seventy-five pounds. Another I did not weigh, but it filled a large wash-tub. The lady came to Boston, and, having had one or two of these cases, I was able to make out what I thought was the matter, although it seemed like an ovarian cyst. The only way you can distinguish, I think, is by aspirating and finding that they do not contain any fluid. I operated, and the woman died after the operation. One, a woman, with a smaller tumor than Dr. Mixter's, recovered. Another was a man whom many of the the gentlemen remember many years ago, and we removed fifty pounds. In the afternoon he died, and I found about twenty-five pounds more. The third one, a woman, got well. As far as my experience goes they occur in both sexes. Mine was called by Dr. Whitney myxolipoma. I don't know whether it is the same thing or not.

COMPLETE OBSTRUCTION OF BOTH URETERS WITH CALCULI.

DR. HARRINGTON: This specimen Dr. Whitney has kindly consented to show. It is the kidneys, the ureters and the bladder from a man whom I operated upon last month with an interesting history. The patient when I saw him had had complete suppression of urine for three days. He had pain in his right side, and there was a tumor to be felt on this side. The history threw light on the condition. Last July, a year ago, he had a similar attack of suppression which lasted five days. He was suddenly relieved, and he began to pass urine. He passed ten quarts the first day. A few days afterwards he passed a stone through the urethra which was as large as the last phalanx of the little finger. This made it probable that a similar condition was occurring. The family were anxious to delay operation if possible. With the previous history, the hope that that stone might pass through led me to submit to a delay of two days more. Thus five days had elapsed with complete suppression of urine. On making a lumbar incision on the right side where there seemed to be pain, and following the ureter down about three inches from the kidney, a large stone was found and removed. That stone was larger than the one previously passed. I then put a catheter into the bladder and washed it out. The pelvis of the kidney was also washed out through the opening in the ureter. The man passed a small amount of urine on the following day — about eight or ten ounces. On the following day a little more. His condition did not improve and he died.

I made a post-mortem. Dr. Whitney examined the specimens and will report upon the condition. It seemed to me before operation that the other kidney must either be destroyed or that there might be only one kidney. Before making the lumbar extraperitoneal incision, I made a median incision and found both kidneys present. I could feel a stone in the right ureter. I did not feel that stone in the left ureter, the stone being very near the bladder.

DR. WHITNEY: Here are kidneys and bladder, from the ureter of one of which Dr. Harrington removed the stone. On the left side there is an impacted stone completely occluding the ureter a few centimetres above the bladder. The bladder is contracted, has evidences of slight hemorrhages, but not a very old cystitis. The kidney on the left side is extremely dilated from hydronephrosis but quite small. This I judge to have been the older process. The obstruction had probably existed a long time, during which compensatory hypertrophy of the other kidney had taken place, and later the ureter of this one also became occluded and there are evidences of dilatation in the enlarged pelvis; but there was still a large amount of kidney substance, which was in a state of acute suppurative inflammation, numerous small purulent foci being scattered throughout the cortex. Microscopically there was evidences of old chronic trouble, in the way of some interstitial changes. It would seem probable that the kidney had become infected not from the bladder, but possibly from the ureter, as the suppuration is in a very acute stage.

In connection with Dr. Mixter's case the necessity for operation is apparent from the commencing anemic necrosis. Evidently the blood supply had been cut off; it is very possible the necrotic area might in a short time have become infected. The dense fibrous tumor is quite distinct in its character from the others, which are essentially lipomatous or fibrolipomatous, the amount varying, and there is but very little myxomatous degeneration, which Dr. Homans spoke of in connection with his tumors. As regards the size these tumors can reach, I think the largest on record is shown in this picture. It occurred in a woman in Ohio, and was estimated to weigh about two hundred and seventy-five pounds. This lasted sixteen years, and during that time she had one child and one or two miscarriages.

Dr. Elliot wishes me to show a specimen of congenital agenesis of the hepatic duct. In this case the infant lived to be four months old, and on dissection no evidence of any hepatic duct outside of the liver was found. There was a gall-bladder and a cystic duct which could be followed down into the intestine, but the hepatic duct, at the time of the operation, ended in a sort of bladder filled with bile. Throughout the liver were dilated ducts and the organ was in the condition of so-called biliary cirrhosis.

This other specimen is one of Dr. Homans's and is extremely interesting, as showing the formation of biliary calculi on a ligature removed some twenty months after cholecystotomy.

DR. ELLIOT: The child from whom this specimen came was operated on at the age of four months, and it was a typical case of congenital obstruction of the bile ducts. Usually the diagnosis is not made, for the reason that the child is jaundiced soon after being born; then the jaundice clears up. As the liver becomes cirrhosed by back pressure, less and less bile is formed and the color fades out, the patients are usually treated for inanition and die. My assistant, Dr. Putnam, now in New York, worked this case up admirably for me. He made repeated examinations of the feces, and found that absolutely no bile entered the intestinal tract, and the diagnosis was established. At the operation the hepatic duct was found bulging forward and full of bile. It had no connection whatever with the common duct, and the gall-bladder was empty. I opened the hepatic duct and put a very small glass drainage tube into it, hoping to drain it until the condition of the liver improved, but the child unfortunately died, probably from cirrhosis of the liver.

DR. CABOT: It seems to me that these specimens

Dr. Harrington has shown illustrate extremely well the importance of operative examination in these cases of anuria. Perhaps half a dozen cases are on record in which the condition of the ureters and kidneys has been investigated by median laparotomy. It seems to me in every case of complete anuria coming on in this sudden way, and probably the result of some calculous stoppage of the ureter, that a median laparotomy offers us almost the only possibility of making out exactly where the stones lie and of devising the proper method of reaching and removing them. Usually the localizing symptoms of pain and tenderness are not sufficient to enable us to locate the stones. I carried out that plan of median laparotomy in but one case, and that was a rather curious one and has been reported. I did not succeed in locating the stone, but the manipulation had the effect of curing the patient. The catheter introduced into the bladder drew two drachms at one time, and that was all the urine passed from the time of the stoppage. I made a median laparotomy, not having the least clew as to which kidney was good and which bad, if one of them was diseased, and having no clew as to where a stone was fixed in either ureter. The patient was a very stout man with a great deal of post-peritoneal fat. The ureters were palpated from the kidney to the bladder without our discovering any hard body. The right kidney was very large, evidently hydronephrotic, and probably was in such the same condition as that smaller kidney in Dr. Harrington's case, that is, a condition of extreme hydronephrosis. The other was a well-formed kidney. It seemed probable, therefore, that the stone which finally brought about the anuria was in the ureter on the side of the good kidney. An incision was made in the loin over that kidney, and with a hand in the abdomen and the other over the kidney, a complete palpation of the kidney and the pelvis was made without discovering any stone. The wounds were closed, and in the first twenty-four hours after that manipulation the patient passed about two gallons of urine. Subsequent pumping out of the bladder with the litholapaxy pump removed not more than twenty grains of calculous material, which, no doubt, had been dislodged from the ureter during my manipulation.

Other cases have been reported. I did not know this subject was coming up or I should have looked up the names of the operators to whom a median laparotomy has been of service under these circumstances. It has been of service not only in locating the stone, but in guiding the operation. In one case the stone was impacted close to the bladder well down in the pelvis, and could not have been reached from the loin except with the help of the hand inside the abdomen. The hand inside the abdomen was able to lift the stone to where it could be reached and removed extraperitoneally from behind. It seems to me the frequency of the stoppage of both ureters by calculus makes the importance of getting the exactest knowledge by a median laparotomy quite evident.

Dr. Wm. S. Halsted, of Baltimore, read a paper entitled

CONTRIBUTION TO THE SURGERY OF THE BILE PASSAGES, ESPECIALLY OF THE COMMON BILE-DUCT.[1]

Dr. Homans: The diverticulum he speaks of is something I have not chanced to meet with, or if I have, I have not known it. My cases at the hospital for the last three or four months have been principally gall-stone cases of extra-uterine pregnancy; there have been a great many of them. In some of the cases in which I expected to find gall-stones I found none, but thickening of the gall-bladder and adhesions in that neighborhood. I should be at a loss to explain how Dr. Halsted's patient with the contracted gall-bladder dilated again. I supposed it would be impossible for these contracted gall-bladders to dilate.

I am very much interested in the general question of the pneumonia that follows these operations whether of gall-bladder or appendix. I have one now in a little girl. The pulse has been 152 for forty-eight hours, and I imagine it is a case of benign embolus coming from my operation for appendix in the interval two days ago. There are no abdominal symptoms, but the pulse is 150 and respirations nearly 50.

I am certainly in accord with Dr. Halsted as to the value of transfusion in these septic cases. It seems to me I have seen it of great value. I am afraid when I have given my subcutaneous injections I have not been careful not to have a tumor form. I am afraid that I tried to get in a good deal at once. If there was not a tumor I should feel I was going too slowly. I have also supposed that infusion in veins was of more value than indirect transfusion in the cellular tissues.

Dr. Cabot: I have nothing to add to Dr. Halsted's very complete explanation of his methods in gall-bladder surgery. I was very much interested in the part of the subject which I wish he had talked about a little more, namely, that of the technique, the method of keeping the parts exposed sufficiently to make his manipulations easy. I was also interested in the incision that he uses, because it is a different one from the one I have always employed. I have used the diagonal incision from the edge of the rectus, or a little beyond it into the right flank, and I can see that with his incision in the semilunar line, he might be able to get the intestines further towards the left, and perhaps in that way uncover parts which I have found rather difficult of access. Certainly it is a suggestion I am very grateful for and shall try at the first opportunity. Also, I was extremely interested in his explanation of his hammer, which of course I had read about but had not seen used, and I can readily believe it would be of a great deal of service in guiding the sutures.

There is one explanation of that dilatation of the gall-bladder which seems possible. He spoke of the first gall-stone he removed as lying rather loosely in the dilated portion of the duct. It occurred to me to wonder whether there might not have been a smaller stone back of that, a stone possibly in the hepatic duct. I remember one case where, after clearing a stone out of the common duct, I felt such a stone in the hepatic duct, and spent a long time trying to get it, and finally broke it and removed a small portion, but a considerable part escaped back into the hepatic duct where I could no longer feel it. I was obliged to leave it, but fortunately it caused no further trouble. May not a small stone have been behind the larger one, and when the larger one was removed, come down and become wedged in the lower portion of the common duct in front of the dilatation which he describes, and have filled that duct so full that the gall-bladder was obliged to distend?

[1] See page 665 of the Journal.

DR. RICHARDSON: I am sure that we all have been very much interested and feel grateful to Dr. Halsted for his paper. It seems to me that the variety of conditions of the biliary passages is so great that one might have a very considerable experience and yet not meet with any of the rare cases he has spoken of; and, on the other hand, one may see a few cases only and strike just those curious things. The cases given are in point. Now in all the gall-bladder cases I have seen, those in which the stone is in the common duct are very few in number, so that my experience has been almost entirely with stones in the gall-bladder without jaundice. That part of the subject is comparatively simple. The surgery of the common duct, stones in the common duct and in the bile-duct too, seems an entirely different matter from stones in the gall-bladder. The difficulties of course are very great, and the particular points one wishes to hear discussed are those raised by Dr. Halsted. First, with reference to the diagnosis of these cases. I heartily agree with him that it is very desirable beforehand to make the diagnosis, and, as he says, if we find out beyond doubt by exploration, we may neglect some of the important points. It certainly is extremely desirable to avoid a useless exploration. My experience is that exploration in cancers of the abdomen, especially in cancers about the gall-bladder, common duct or pancreas, has a large mortality. That is not my experience alone either. I looked over the records of our abdominal ward the other day, and was impressed by the large number of deaths in gall-bladder surgery in the hands of all the surgeons in explorations in which there was cancer. They die two or three weeks after the operation, not the result of it, but hastened by it. So it seems to me very desirable to eliminate if we can by a correct diagnosis the hopeless cases and not subject the patient to the operation.

The next point, the incision, interested me, and I am glad to know that that rectus incision is made. That was the incision that Tait used first, and we all used the oblique incision. I have now come to the rectus incision, but go rather through the outer portion of the muscular fibres of the rectus, and that gives a beautiful view of the common duct and also of the colon, and, if necessary, you can go toward the stomach and it does not cut across muscular fibres.

One thing I have had a little experience in, and that is in the matter of hemorrhage,— Dr. Halsted asked for that,— but not hemorrhage from the stomach. I formerly believed that there was not much danger in operating on jaundiced cases,— I mean danger of hemorrhage,— till some years ago a patient died from the prolonged ooze from the gall-bladder; nothing would stop it. This year I lost a patient within twelve hours after removal of gall-stones in a very jaundiced woman in which in the whole operation there was not a single ligature applied: it was not necessary.' That woman died, and apparently every capillary in the field bled. Not only that, but the peritoneum all around the wound bled. I think one of my colleagues had a similar experience, an extensive capillary ooze, which proved fatal in spite of efforts to prevent it.

Another point is the localized paralyses of the intestine. These usually are the result of gall-stones, but I have found acute inflammations in two or three instances, I think four in all, in which there were no gall-stones, and yet there was an acute infection of the gall-bladder, and the symptoms in most of the cases were those of acute intestinal obstruction. I think all that had these symptoms recovered, but the obstruction was apparently due, as pointed out by an English author, to the fact that the hepatic flexure of the colon was distended and covered with exudation, and apparently the seat of a localized infection. It is very extraordinary, it seems to me, that an acute inflammation of the gall-bladder should have the symptoms of an acute intestinal obstruction, and I think that is the explanation of it.

With reference to the time of operating, it seems to me so desirable to take out gall-stones when they are in the gall-bladder, that if a patient has had several attacks of jaundice and got over the jaundice it is wise to wait a while to see if he will not get over the present attack; then, the common duct being clear, it is probably true that the stones are in the gall-bladder. I have followed that whenever I could, but there are cases in which it is clear from the duration of the jaundice that there is little if any chance that the stone can be made to pass. Then, of course, if the gall-bladder is opened and the common duct is not completely cleared we have the conditions for permanent fistula. Dr. Mixter has had a very gratifying case of that kind in which secondary operation proved efficacious.

One other point occurs to me and that is whether to sew the gall-bladder to the abdominal wound or not. I have always performed that operation when I could. Eight or ten years ago a case came to me in which the gall-bladder was a little knob on the under surface of the liver three or four inches from the skin. There never had been any question that you ought to sew the gall-bladder to the abdominal wound to prevent extravasation of bile. I did not know what to do in this case. I was then led to the last resource of a man who does not know what to do and that was to put in gauze. We took the gall-stones out of the common duct and then put gauze about, as Dr. Halsted mentions.

I am glad to hear that it is regarded in Germany, by the most experienced, wise to prevent extravasation by the use of sutures in the tubes, for I have felt perhaps that we were a little too confident in the use of drainage and in the closure of gall-bladders by suture. I never have dared to close a gall-bladder by suture and drop it into the abdominal cavity and sew up the abdomen. I dare say it is safe enough at times, but if things do give way it takes but a very short time for the abdominal cavity to be flooded. When I have sewed the gall-bladder up I have made provision for extravasation by a small strand of gauze and that has not worked badly. I have not had the good fortune not to lose cases of gall-bladder surgery. I think Dr. Elliot looked up all the cases here and found the mortality about 20 per cent. If we leave out the cases of malignant disease the mortality is very much smaller; still it seems to me there is present the danger of hemorrhage in jaundice and occasionally the danger of peritonitis, but that right upper quadrant is so protected by the mesentery and the colon that the infections are easily limited to that quadrant. I have never had a case of peritonitis following gall-bladder surgery. Those cases that have died have generally had a base of malignant disease, and have died in two or three weeks after the operation.

DR. MIXTER: There are two or three points Dr. Halsted has mentioned and one or two he has not mentioned which I think are of great interest. First,

the question of sewing the gall-bladder to the abdominal wall. If there is one thing I think is an unsurgical procedure it is the sewing of any hollow viscus to the abdominal wall. I do not believe the man lives who can make a tight joint and do it in any reasonable time, especially when he has to sew it to an incision very much longer than the incision of the hollow organ. That is just as true of the intestine in artificial anus as in the gall-bladder. In addition to the strain brought on the gall-bladder we must remember the abnormal position in which it is placed by such suturing. I believe most thoroughly in the method Dr. Halsted has suggested, only I think it is better to tie it with a good piece of silk and tie tight enough, so that when in two or three days after the packing can be removed the whole thing comes out because where the string has gone round there has been a slough. I have never seen any infection follow such slough. The same method is applicable to the intestine.

Then there is one point Dr. Halsted did not allude to, except perhaps incidentally, and that is the question of leaving these wounds in the common duct unsutured. I have had quite a number of cases of stones in the common duct, and a part of them I have sewed up and a part I have not. I believe it is said that the statistics are better in those cases where suture has been used. I have certainly seen cases where it is impossible to suture, not having tried Dr. Halsted's mallet, but where a considerable opening had to be made. In one case two openings at different points had to be made, and the patient's condition was such that it was absolutely essential to stop the operation. In those cases I have simply put a tube down to the duct and packed some gauze round it, and the patient got well. I have had at least four patients recover where there has not been suture of the duct. As far as my experience goes, one has been as successful as the other, and the biliary discharge from the duct, which has lasted a few days, has stopped in every case.

There is another class of cases, which has not been mentioned, which has interested me — two classes in fact, one in which you operate expecting to find a stone in the gall-bladder or common duct where the symptoms have been almost typical. There have been two of these cases referred to me from the medical side at the Massachusetts General Hospital, and in three cases now I have opened the abdomen expecting to find a gall-stone or some obstruction and have found a very localized tubercular peritonitis, no involvement that I could find about the duct, no enlarged glands, such as Fenger describes, but a little localized peritonitis. I enlarged the incision to see if the tuberculosis had extended, and it was, apparently, only at that one point. Those cases got well and, so far as I have been able to follow them, they stay well. The other cases are those cases which seem to resemble gall-stones, but where you have a localized inflammation about the entrance of the common duct and the pancreatic duct in the head of the pancreas. There I think Dr. Whitney will remember one or two autopsies being made at the hospital where the patients have died following operation for supposed gall-stone, where the only possible thing found has been very localized pancreatitis, nothing like the hemorrhagic form, but apparently a chronic subacute form of pancreatitis characterized by minute abscesses in that neighborhood. Those conditions can be recognized at the time of the operation by the swelling. In both cases I thought the trouble was malignant and in both it was found to be simply this inflammatory process.

These gall-bladder and gall-duct cases I think are almost the most interesting we have. They may be the most puzzling. I remember Fenger saying to me that he knew nothing which would make one feel so helpless as to open the abdomen expecting to find some definite thing in connection with the gall-bladder or common duct and find you could make out absolutely nothing.

DR. HALSTED: The reason we try to avoid the tumor in transfusion is because fluid injected so rapidly into tissues insults the tissues to a certain extent, as experience has shown, and if it has to be repeated often might possibly lead to a low-grade inflammation which would be painful. We have seen that on the medical side frequently. The tube is inserted gently and it may take one-half to one hour for the fluid to pass in.

In reference to the incision and Dr. Cabot's request for further information as to our technique in exposing parts — we have had occasion twice to exsect ribs, once because the liver was very small, once because it was very large. This suggestion came from Dr. Lange, of New York. Once we found excision of ribs of great use in extirpation of a tuberculous kidney on the left side which was very adherent, especially to the diaphragm — a most difficult operation, and we finally thought we would have to give it up, but excised these ribs and then completed the operation.

We had discussed that same possibility that the stone might have been in the hepatic duct. We were anxious to accept that explanation because it was a little easier for us. I have once seen a stone at autopsy which had been sliding up and down in the common duct, sometimes in the liver and sometimes almost in the duodenum. This was a stone as large as my thumb and it had almost made its way into the duodenum. There was a large rent opening in the place of the ampulla and the stone had almost passed in, but could not quite, as there was a little flange on the stone. We had examined the hepatic duct so far as it was palpable with care and I thought it was more likely to be in a diverticulum, because it is so much easier to overlook a stone in a diverticulum.

Dr. Richardson spoke of so many rare cases in gall-stone surgery, that almost any surgeon, however great his experience, seldom sees many rare cases, and it does seem strange that we have had so many rare cases in Baltimore, and particularly strange that we have had so many common duct cases. I, of course, spoke of very few of them, but we have had a very large percentage of common duct cases. I think when we had had six common duct cases we had not had much more than twelve gall-stone cases altogether. In our part of the country patients will not be operated on or doctors will not send them in until they are in a desperate condition. They must be jaundiced, in fact without jaundice many believe there are no gall-stones, so that we in our community do not get the cases so early.

Dr. Richardson spoke of the little knob found in the liver. We have once or twice left little gall-bladders where we were sure there was no stone in the gall-bladder. I think it would be wiser to excise such.

With reference to the purse-string suture, we were afraid the gall-bladder might slip and it has been our habit in such cases to use the purse-string suture, and

granted that the purse-string suture is advisable it is easy to understand why we use catgut instead of silk.

I agree that these are about the most interesting cases in surgery. I do not know any cases that are attended with such reward. Patients come in almost moribund. It is simply marvellous how, if they are relieved of their stones, particularly in the common duct, they commence to bloom and in a few weeks are eating tremendous dinners. I saw, before starting for Boston, a man operated on three weeks ago, who for ten years had had gall-stones, and his mind was very much affected with his jaundice. The stones had been in the common duct the past few years and he was dazed, would have temporary fits of aberration, and yet that man was a switchman in some very important position and played his game of chess, as he called it, in this condition. In this case it did seem as if he could not be restored, and yet in three weeks he is now almost well.

I have never had any experience with local tuberculosis in that region and was very much interested in that.

Some surgeons stitch the incision which they make into the common duct; others do not. Among the latter are men of large experience in the surgery of the bile passages. If the patient's condition is good and the gall-bladder has not been removed I suture the duct. When the duct has been carefully sewed it is not necessary to pack the peritoneal cavity so generously as one packs it when the duct is not sewed, and the bile,instead of soaking the dressings and the patient, is syphoned with a rubber tube from the gall-bladder to a bottle in or under the bed. Packing promptly soaked with bile might not wall off the general peritoneal cavity so well as dry gauze. The Mikulicz pad and gauze handkerchiefs caught up by the middle (conical pads) should not be used, because their extraction is sometimes very difficult and perhaps dangerous, and certainly often gives the patient unnecessary pain. We fancy narrow strips of bismuth gauze for the packing. These strips are about two inches wide and four layers thick, with the raw edges most carefully folded in. The duct should be sutured as rapidly as is consistent with perfect work. It is not by any means always necessary to use the hammers, but sometimes they seem almost indispensable. The exquisitely fine needles with a full curve and a spring eye, made by Wülfing-Luer, of Paris, and the needle holder designed by Cushing for these needles,have become beloved tools for this and other work. The needle holder has a convex and a concave blade which accurately fit the needle, and hence do not break it. The gauze should be removed with gloved fingers and not with forceps, because as each strip is tested for withdrawal it should be unfolded, spread out to its full extent and gently pulled, first at the edges.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

REGULAR meeting Wednesday, October 25, 1899, DR. W. E. FAY in the chair.

DR. E. S. BOLAND read a paper entitled

UNLOOKED FOR DYSTOCIA IN CERTAIN MULTIPARÆ.[1]

[1] See page 654 of the Journal.

DR. CALL: I don't think I have ever met with a case so difficult as those which the doctor describes, when there was no apparent abnormality. I have met with a good many cases of slight degree of the same trouble, due I think, as he says, chiefly to relaxation of the abdominal walls that comes with frequent pregnancies, and also I have always supposed that the uterine muscular fibre was weakened, and its power of contraction impaired as well as that of the abdominal walls, but I do not remember having seen any case that I have not been able to deliver without any very severe operation. I remember certain cases in which I have succeeded in making the head engage by trying first an abdominal bandage, and when that alone was not sufficient, I have had a folded sheet put around the abdomen, and some one stand behind and above and pull during every pain, and in that way succeeded in making the head engage. I remember one case where I had delivered the woman myself four times, the labor being perfectly normal. The fifth time I was obliged to use forceps, and the only reason I could give for it was that the patient had gotten extremely tired and exhausted the day before. The child, as it usually is in those cases, was a little larger than the ones before. It seems to me if I had such a case, and pregnancy occurred again that something might be done to prevent such an occurrence by prophylaxis. It seems to me there might be a good chance by having the woman wear an abdominal bandage constantly, and having the condition of the abdominal walls looked after, and using strychnia and various tonics of that kind, to make the next labor a happier one.

DR. FAY: I would like to ask the reader how much can be accomplished by external pressure over the pubes to flex the head as well as to help its descent. I have tried in vain sometimes to get some advantage in that way. And I would like to ask another question, whether the size of the body, apart from the size of the head, has ever appeared to be a distinct difficulty in causing the proper descent of the child.

DR. BOLAND: I am sorry I cannot answer the last. I have not noticed. In regard to the effect of suprapubic manipulation, I mentioned it. I do it, as I say my prayers, without much hope of immediate returns. I think I can do something from below with the fingers in the vagina. I think I can do a little flexing there, and if you hold it by suprapubic pressure I think something can be gained.

DR. EDGAR GARCEAU reported

A CASE OF EXTRAPERITONEAL NEPHRO-URETERECTOMY FOR TUBERCULAR DISEASE.

DR. BOLAND: I think the doctor deserves to be congratulated on the result of such a long, severe case, followed up clinically, surgically and pathologically, successfully. The disappointment to me in the paper is that the urine does not give trustworthy assistance in making the diagnosis. I would like to speak of a case I had last spring in a parturient woman eight days after delivery. The temperature was 103°, and I thought I had sepsis. The woman had no antecedent trouble except pain in the left side. She had gone to full term, and had a fairly easy delivery. There was nothing significant about the urine. I had Dr. Haven see the case, and he said it was nothing to do with the uterus, and that there

was no evidence of puerperal sepsis ordinarily so called. At that time it seemed like an exudate over the descending colon, and I was so much satisfied that was what it was I gave repeated injections of warm water. The doctor thought it probably was an exudate so long as injections did not relieve it, and she was admitted to the Carney Hospital. They temporized quite a while and made applications externally. At the end of ten days it was decided to do an exploratory laparotomy, and, much to their surprise, they found an enlarged kidney disorganized. Before that the urine had developed albumin and pus. They did a nephrectomy through the central incision, and the woman made a very prompt improvement, so much so that they allowed her to sit up at the end of two weeks. Soon they let her come home and she became pretty miserable; vague pains and headache, and temperature 101°, 102°, 102.5°, and still some albumin in the water. I put her to bed on light diet and she began to improve again, and at the end of three weeks was able to be up and around. At present I think she is entirely well, wheels her baby out and thinks she is well. The urine is clear. I thought maybe she was allowed to sit up too soon, and there was a certain amount of renal inadequacy and that light diet and rest were needed. I should like to ask whether in this case there was any insufficiency of one kidney to carry on the work right after operation. Possibly the tolerance had been developed beforehand.

Dr. Garceau: I think there is a good deal in that, that the other kidney has been gradually taking upon itself the work which the other one ought to do, but besides this there is a great reserve power in the remaining kidney, when one has been extirpated, to do a very much larger share of work than would ordinarily be expected of it.

Dr. Boland: Pathological examination of the kidney proved it to be tubercular. The patient is now well and attending to her work.

Recent Literature.

Recherches sur les Matières Colorantes du Foie et de la Bile et sur le Fer Hepatique. Par MM. A. Dastre, Professeur de Physiologie à la Faculté De Paris, et N. Floresco, Docteur Ès-Sciences. G. Steinheil, Editeur. Paris. 1899.

Part I: MM. Dastre and Floresco have conducted some investigations of the coloring matters of fresh normal bile from the gall-bladders of several species of vertebrate animals, among others, the calf, the dog and the pig, which have resulted in the discovery of two new pigments, one or both of which may be present in fresh bile. These pigments have been named by the authors, respectively, *biliprasinate* of sodium and *biliprasine*. They represent products which are formed in the transformation of bilirubin to biliverdin, the two pigments heretofore considered to be the sole pigments of normal bile in the gall-bladder and hepatic ducts. The biliprasinate of sodium is a pigment of a yellowish-brown color, of slightly browner tinge than the bilirubinate of sodium, the original bile pigment from which it is derived by oxidation. It is distinguished from the bilirubinate by three characteristics: (1) When subjected to a current of CO_2 it changes to a green pigment (biliprasine); (2) acetic acids and acids in general cause the same change; (3) it is unstable in a vacuum if exposed to light. None of the three above reactions characterize bilirubin of the bilirubinate of sodium, the principal form in which bilirubin is present in the bile.

The yellow color of the bile of the calf in the cases in which this bile is yellow is due to the presence of this substance. The biliprasinate is the alkaline salt of the second pigment, biliprasine, and can be converted to it by the addition of an acid. This biliprasine is the acid of which the biliprasinate is the salt. It is converted to the salt by the addition of an alkali. It is a green pigment derived from the biliprasinate by the process of oxidation and hydration. It differs from biliverdin, the final pigment into which it is transformed, by the following characteristics: (1) Upon the addition of an alkali it is transformed to a yellow pigment (biliprasinate); in a vacuum it turns to a bilirubinate. This pigment is the predominant pigment in the bile of a majority of calves, of the bile of cows and the bile of rabbits. These biliprasine pigments represent transition products in the transformation of the original bile pigment, bilirubin, to the final pigment of normal bile, biliverdin, which occurs as a process of oxidation and hydration. The transformation occurs *in vitro* in the presence of an excess of water under the influence of free oxygen, heat, reaction and light. *In vivo* it occurs, according to the opinion of the authors, under the influence of an oxidizing ferment produced by the hepatic cells.

Part II is the record of a study of the special function of the liver as a depository or storer of iron. The authors find that the livers of vertebrates and of invertebrates contain much larger per cents. of iron than any other organs or parts of the body. The presence of this excess of iron is not dependent upon the food or conditions of feeding. It is not dependent upon the destruction of blood corpuscles, since it exists in invertebrates which possess no iron in the blood corpuscles. The authors conclude from a careful investigation of the character of the iron compound in the liver and of its relation to these various conditions that the liver has a special affinity for iron, a *fonction martiale*. The work concludes with certain hypothesis in regard to the use of this function in the economy of the body.

Part III is a record of the study of the coloring matters of the liver. The authors find that the liver of vertebrates and many invertebrates contains certain coloring matters which color its tissues. These pigments are in vertebrates distinct from the pigments of the bile, which in these animals are secretions of the liver, not substances native to its tissues. They are present and identical in kind in some invertebrates which have no hemoglobin in the blood. In some invertebrates they are identical with the bile pigments. In some, as in vertebrates, they are distinct from these bile pigments.

In vertebates and in most invertebrates examined two distinct coloring matters of the liver tissues are present: (1) A pigment soluble in water which contains iron; (2) pigment soluble in chloroform and in alcohol, insoluble in water, and containing no iron. The first is called *ferrine*. The color of this pigment is due to the iron which it contains. The second is called *choléchrome*. These pigments exist together in

the tissues of the liver, giving the organ the color which it possesses when all the bile and blood are washed from it. In vertebrates they can be separated from the tissues only by digestion with papain or by gastric juice, or by shaking with water after complete drying and pulverizing of the tissues. In some invertebrates the pigments can be extracted by water directly from the macerated tissues.

The Sexual Instinct; its Uses and Dangers as Affecting Heredity and Morals. By JAMES FOSTER SCOTT, B.A. (Yale University), M.D., C.M., (Edinburgh University); Late Obstetrician to Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C., etc. Pp. 436. New York: E. B. Treat & Co. 1899.

This is a book clearly written for a definite purpose, which is apparent from its first to its last page. The author is very much in earnest, of that there can be no question, and it is here that a possible criticism of the book lies. It lacks in a measure the judicial spirit, so absolutely essential in a discussion of this character. On the one hand, it merges occasionally into sentimentalism, and on the other, into an attitude toward sexual matters more extreme than the facts of the case seem to justify. Apart from this minor criticism the book is well worth reading by those scientifically interested in the community at large, however, where, like many in the subject; we would not commend it to books of its class, it would, we fear, tend to increase rather than diminish the morbid sexual instinct which it is designed to combat.

Some of the subjects discussed are: The Physiology of the Sexual Life; Woman and the Unmanliness of Degrading Her; Prostitution and the Influences that Lead a Woman into such a Life; the Regulation of Prostitution; Criminal Abortion; Gonorrhea; Syphilis. The book in general is a narration of the details of the seamy side of life; we sincerely hope it may do good, but our confidence in the success of its mission, we confess, is not great. It is bound and printed in an unnecessarily cheap manner for this time of good bookmaking.

Gout: its Pathology and Treatment. Founded on the Gulstonian Lectures on "The Chemistry and Pathology of Gout," delivered by the Author before the Royal College of Physicians of London in 1897; with the Addition of some Recent Investigations concerning the Treatment of Gout, and a Detailed Account of the Treatment of the Various Forms of Gout. By ARTHUR P. LUFF, M.D. (Lond.), F.R.C.P., etc. New York: William Wood & Co. 1899.

The contents of this little volume of two hundred and fifty pages are somewhat fully stated upon the title-page. The author divides his work into four parts. Part I is on the chemistry and pathology of gout; Part II deals with the causation of gout, its various forms and its diagnosis and prognosis; Part III comprises a series of investigations undertaken with the object of ascertaining the various conditions affecting the formation and removal of gouty deposits, the influence of alcoholic drinks on the gouty process, the solvent effect of the mineral constituents of various vegetables on gouty deposits, and the value of certain drugs in effecting the removal of such deposits; Part IV is devoted to the question of the treatment of gout and of gouty conditions, especially in the light of recent investigations. The important question of diet has not been overlooked by the author, and a classification of various mineral waters is given according to their therapeutic value in the treatment of the various forms of gout. England is a pre-eminent field for the study of acquired and inherited gout in all its protean forms, and from English practitioners have proceeded most of the standard books on the subject. The present volume will be found handy and useful. We miss from the list of baths and mineral waters a few of the less generally known in the winter-resort zone, which might advantageously have been included.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By JOHN H. MUSSER, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Third edition, revised and enlarged. Illustrated with 253 wood cuts and 48 colored plates. Philadelphia and New York: Lea Brothers & Co. 1899.

The first edition of Dr. Musser's "Treatise on Medical Diagnosis" was published in 1894, the second in 1896. The appreciation of the good features of the book, which are many, and the rapid changes in the collateral branches and in the sciences allied to medicine, have now called forth a third edition. The present volume is an octavo of almost eleven hundred pages, with index, and has been largely rewritten and rearranged. Dr. Joseph Sailer has rewritten the chapter on Nervous Diseases; Dr. Posey the section on Diseases of the Eye; Dr. Kirkbride wrote the pages on Pictoric Records of Physical Signs, and Dr. W. S. Smith has revised the section on Sputum. The paper and printing are excellent, and the numerous illustrations of unusual merit.

Two Lectures on the Temples and Ritual of Asklepios at Epidaurus and Athens. By RICHARD CATON, M.D., F.R.C.P., Honorary Physician, Liverpool Royal Infirmary. Pp. 42. Reprinted from "Otia Merseiana." 1899.

These lectures delivered at the Royal Institution of Great Britain are an historical sketch of the cult of Asklepios. The book is profusely illustrated with well reproduced photographs of buildings and masterpieces of Greek art relative to Asklepios, and with the text afford an admirable brief exposition of an interesting time in the childhood of medicine.

Essentials of Medical Chemistry, Organic and Inorganic. Prepared especially for Students of Medicine. By LAWRENCE WOLFF, M.D., Demonstrator of Chemistry in Jefferson Medical College. Fifth edition. Revised by SMITH JELIFFE, M.D., Ph.D. Philadelphia: W. B. Saunders. 1899.

This book, No. 4 of the series of Saunders' Question Compends, fulfils its purpose very satisfactorily. This edition is thoroughly revised and up to date.

THE LESIONS OF TERTIARY SYPHILIS.— According to the *Philadelphia Medical Journal*, Professor Fournier, of Paris, has related the analysis of 5,790 cases of tertiary syphilis, and demonstrated that of all the tissues of the body the most frequently invaded, the nervous system headed the list with 1,851. Next to this comes the skin with 1,418. The most startling particulars in the table were 758 cases of cerebral syphilis and 628 cases of tabes. This coincident occurrence of syphilis and tabes is a most interesting fact.

THE BOSTON

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PRIZES AS A STIMULUS TO RESEARCH.

We note, with considerable regret, that the custom of leaving sums of money for the establishment of prizes to be won in competition shows no evidence of abatement. The latest addition to the long list is a gift of 100,000 francs to the Institute of France from M. Osiris, to be devoted to the founding of a triennial prize for original work in various fields. In our own country the second quinquennial Samuel D. Gross prize, amounting to $1,000, is to be awarded January 1, 1900. These are relatively large sums of money, and as such they have an attraction which will no doubt excite wide competition. In the meantime countless smaller money prizes are being offered year by year, and drawing forth more or less meritorious work, usually called original. It is no secret that the smaller prizes are not eagerly competed for, and that not infrequently the prize is entirely withheld because no sufficiently worthy work has been offered.

It has recently, and very wisely, been maintained by the President of the American Golf Association that the giving of costly prizes at tournaments must be discontinued if the spirit of true sport is to prevail. Why does not the same situation face the prize-giving and prize-getting now so prevalent in so-called scientific fields? Evidence is certainly accumulating to show that the greatest honor goes with the largest prize, which is another way of saying that the more money one can win, the better his scientific work must be. This is putting the cart before the horse in a most unfortunate fashion, and is a manifest absurdity. It is coming dangerously close to the position of determining scientific attainment by a money standard. We recall on one occasion talking with a somewhat radical but extremely high-principled person on this topic, who felt that the moment a man offered his scientific work for a money prize, he irrevocably belittled himself and the science of which he was the would-be exponent. This point of view is no doubt too extreme, but it must, we think, be admitted that there is always an undercurrent of feeling that the purely money side of the prize is something to be kept in the background, and said as little about as possible. It is, in short, an extremely questionable way of earning money. Our respect for a man and his ability is not measured by the number of prizes he wins; after a certain point of success is reached, we inevitably question his motives, and wonder why he is not content to publish his papers for no other reward than the consciousness of good work and the approbation of his colleagues. Unfortunately the money counts. We are not straining our imagination when we say that we have heard men freely confess that they tried for a scientific prize because they wanted the money. This is simple honesty, and this motive will be operative just as long as large amounts of money are offered to the successful competitor. But this certainly does not stimulate research or promote the ends of science in a way which we should admit as worthy of further perpetuation. We are struggling against the prize system in our schools, and finding it altogether bad, but the prize system in later life shows no tendency toward decrease. Money which might be much better spent for other purposes is continually being tied up, that its income may aid in the "encouragement of scientific research." If we must have visible rewards for our original research, why not have them in the form of public recognition on the part of a learned society, or in some way in which the honor will be predominant and the money be suppressed? We are quite sure the cause of science would not be injured thereby.

SPONTANEOUS RUPTURE OF THE HEART.

Most of us are liable to die from some other cause than spontaneous rupture of the heart. At the same time, the gradually accumulating literature appears to show that the accident is possibly not so rare as we have been taught to think. It is furthermore quite possible that the deaths occasionally reported without apparent cause may, at least in part, be due to a rupture of the heart wall. In any case, reports adding to our knowledge of this somewhat rare condition are welcome and needed.

In the issue of the Journal for November 9, 1893, Dr. W. T. Councilman published a paper in which he discussed the question of sudden death due to the heart. In that communication he stated that in his own experience he had seen four cases. Devergie, quoted by Councilman, estimated that two and a half per cent. of cases of sudden death were due to ruptured heart. In general, the condition is associated with the changes in the circulating system coming on during the latter periods of life.

In the Journal of July 18, 1895, Dr. J. A. Tanner reported a case of perforation of the heart, in which the autopsy, done by Dr. W. H. Whitney, showed an atheromatous degeneration of the coronary arteries, with subsequent changes in the myocardium, which explained the rupture. The patient in this case was a man of eighty-four, who had previously had certain more or less vague symptoms on the part of the heart.

A more recent paper on the subject is by Dr. A. W. Hoisholt, of Stockton, in California, who has had an opportunity of studying two cases at the State Asylum for the Insane, and has reported his experience in the *Occidental Medical Times* for October, 1899. Of interest in these cases is the fact that no complaint of heart disturbance had been made or discovered, and that both patients were comparatively young men, one fifty-five and the other about forty. The symptoms in the first case were of six hours' duration, associated with sharp pain, cyanosis and dyspnea. The autopsy revealed a small rupture, about the size of a goose-quill, communicating directly with the left ventricle. There was a certain amount of degeneration of the heart vessels and fatty degeneration of the heart muscle. The second patient apparently died peacefully, as the following account shows. He occupied a dormitory with eight other patients, and neither these nor the night attendant, who looked into the room once every hour during the night, had had any reason to suspect that he was ill. He was found lying on his back with his legs drawn up in a position of easy repose, with his arms folded over the abdomen, but lifted slightly from the surface by the rigor setting in after death. The heart was enlarged and flabby, and showed a tear about 1.15 centimetre in length, located about 3.75 centimetres from right border of the left ventricle and about the same distance from the apex. In the centre of the tear a small opening admitting an average size probe was found to connect with a tortuous canal, the under end of which was lost among columnæ carneæ. The epicardial fat tissue was thick around the bases of the ventricles, especially over the right ventricle, where it measured 0.5 centimetre in thickness. The mitral valves showed fatty deposits.

The importance of this condition will increase with our knowledge. It has been suggested that a positive diagnosis is, at present, only possible at autopsy, but there can be no doubt that attention directed to the possibility of heart rupture in doubtful cases will do much toward removing the present obscurity of the clinical picture, and to that end it is desirable that all cases should be placed on record.

CHRISTMAS AT THE HOSPITALS.

IT is a pleasing custom, and one which we hope may not die out, of recognizing in some substantial way at the hospitals the advent of Christmas. A dinner with some added delicacy for those whose condition permits a slight departure from a strict diet is welcome anywhere, and, no doubt, particularly to the hospital patient, but something more than this is also quite in order, and appears to have been carried out this year with gratifying success at our larger hospitals. Through the offices of Mr. O. E. Mills, of the New England Conservatory of Music, a somewhat elaborate programme of song and pantomime, with the introduction of the perennial Santa Claus, was given at the City Hospital the day before Christmas and repeated at other institutions on Christmas Day. This seems to have met with the undisguised approval of the patients, particularly of the children, who found Santa Claus as entertaining and extraordinary an apparition as he has proved to be on countless other occasions. Christmas trees and stockings have also been forthcoming, and friends of the hospitals have, as usual, provided numerous gifts.

MEDICAL NOTES.

THE DUKE OF WESTMINSTER CREMATED. — We learn that the body of the late Duke of Westminster has been cremated. This is an example which we hope may be more and more generally followed.

FURTHER PREVENTION OF CRUELTY TO ANIMALS IN THE DISTRICT OF COLUMBIA. — We learn from the very best of authority that there is no possibility of the passage by the United States Senate of Senate Bill No. 34, entitled "Further Prevention of Cruelty to Animals in the District of Columbia."

SPREAD OF PLAGUE. — It is reported that plague has appeared at the port of Delagoa Bay, and also sporadically in Algeria, while several thousands are daily dying in India. The fear which has been mentioned, that the disease may appear in the armies now in South Africa, is rather too remote a danger to excite any grave anxiety.

HOSPITAL BURNED AT SANTIAGO. — It is reported that the yellow-fever hospital, located on an island in Santiago, has been burned. The fire was evidently of incendiary origin. An adjoining building, containing a hundred bodies of American soldiers in sealed coffins, ready to be shipped to the United States, was saved by the heroic efforts of the firemen.

A MUNIFICENT PRIZE. — It is stated that the Institute of France has received from M. Osiris a sum of money sufficient to supply a triennial prize of 100,000 francs to be awarded for the most remarkable work of general interest. The donor makes special reference to medicine and surgery. We sometimes wonder if this prize-offering is the best method of promoting scientific work. It seems to us doubtful.

NEW MUSEUM FOR THE UNIVERSITY OF PENNSYLVANIA. — The University of Pennsylvania's free Museum of Science and Art, one of the late Dr. William Pepper's cherished hopes, was formally opened last week. Immediately following the presentation to the Board of Trustees of the museum, a bronze statue of the late Dr. Pepper, the gift of friends, was unveiled. Mrs. Pepper, the widow of Dr. Pepper, presented, as her memorial to the memory of her husband, a gift of $50,000, as a fund to carry on the work of the museum.

POOR PROVISION FOR WOUNDED BRITISH SOLDIERS. — As is natural in the presence of reverses, the War Office in England is receiving a large amount of criticism. We learn from a correspondent to a daily paper that great indignation has been excited

by the discovery that the convalescent homes for which provision had been made are none of them ready to receive the wounded coming back from the war. No nurses have arrived, no resources have been provided, nor have any of the hurt been taken to the homes which were to be made ready. Yet in February last the War Office pledged itself that preparations would be made.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, December 27, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 89, scarlatina 64, measles 52, typhoid fever 16.

Boston Society of Medical Sciences. — At a meeting of this Society, held December 19th, the following papers and communications were offered: Dr. W. F. Whitney read a paper on "Malformations of the Kidney," and reported two unusual cases. Dr. Charles S. Minot spoke on the "Development of the Kidney," and demonstrated the probable source of such malformations as had been described by Dr. Whitney. Dr. Thomas Dwight demonstrated a number of unusual skulls, and advanced certain theories regarding their formation. Mrs. J. H. Cunningham read a paper on "Saprolegnia," in relation to its fatal effect upon trout, particularly in hatcheries. The reader described an ingenious filter, which he had devised as a possible means of preventing the entrance and growth of saprolegnia in the water of tanks, etc., used for raising trout.

A Bequest to Carney Hospital. — By the will of Julius Adams, a lawyer of Boston, the Carney Hospital in South Boston gets $25,000. Mr. Adams, who was for some time a patient in that institution, also bequeathed various amounts to some of the nurses and doctors by whom he was attended while there.

Free Vaccination. — Free vaccination has begun in the schools in East Boston. That there is a dread of the spread of small-pox in this district was evidenced by the large number of persons who grasped the opportunity afforded by the Board of Health as a safeguard. Two hundred and thirty-four were vaccinated the first night, and it was stated that some were turned away from the Lyman school. The greatest number was vaccinated in the Emerson schoolhouse, the number reaching one hundred. Vaccination will continue each evening for a week from the time of beginning.

Another Case of Small-Pox in Chelsea. — Another case of small-pox has been reported from Chelsea after a respite of two weeks.

Diphtheria in Waltham, Mass. — During the past week 15 cases of diphtheria have been reported to the Board of Health in Waltham, of which three have resulted fatally. Several afflicted with the disease have been taken to the contagious hospital. It is said that the spread of the disease was caused by neglect on the part of some of the families in not calling a physician sufficiently early.

A Centenarian. — James J. Cavanaugh is said to be the oldest person in the State of Massachusetts. He is reported to have passed his one hundred and ninth year in the possession of his faculties, with the exception of a considerable degree of deafness. He lives in Watertown.

Annual Meeting of Scientific Societies. — The American Association for the Advancement of Science and its affiliated societies hold their annual meetings at New Haven, December 28th and 29th. The Association of American Anatomists, the American Physiological Society, the American Chemical Society, the American Society of Naturalists, the American Morphological Society, the American Psychological Society, the Society for Plant Morphology and Physiology, the American Folk-Lore Society, the Archeological Institute of America constitute the affiliated societies. The Society of Naturalists has provided at one of its sessions for a general discussion on "The Position Universities ought to take in Regard to Investigation."

An Unusual Breach of Trust Case. — A claim of $5,000 has recently been brought against a Hartford, Conn., physician on the following somewhat extraordinary grounds: The doctor had agreed to take charge of a maternity case but was not present when the child was born; a few days later the child died. The physician was then sued for breach of trust in the case and as being responsible for the death of the child. The defence demurred to the complaint, stating that the father could not have acted as the agent for the child and that the doctor did not contract with the unborn child for its delivery. As the case was brought because of the death of the child, the defence claimed that it should be quashed. The judge ruled that suit may be brought in behalf of a child unborn when its parents had made a contract to deliver and care for it after its birth, and found true cause for action on the part of the parents. The case has caused considerable interest throughout the State, and is the first of the kind brought under Connecticut statutes.

NEW YORK.

Medico-Legal Society. — At the annual meeting of the Medico-Legal Society, held on December 20th, the following officers were elected: President and Treasurer, Clark Bell, of New York; Vice-Presidents, Drs. George L. Porter and T. D. Cruthers, of Connecticut; Recording Secretary, H. Gerald Chapin, of New York; Corresponding Secretary, Moritz Elbinger, of New York; Librarian, Howard Ellis, of New York.

A Truant-School Farm. — The school authorities of the boroughs of Manhattan and the Bronx have applied to the Board of Estimate and Apportionment for an appropriation to cover the expense of purchas-

ing and equipping a truant-school farm, to which incorrigible children may be sent, instead of being confined in the truant school in the city, as at present. It is the design of the Committee on Special Schools to make this school farm an attractive home where the truant pupils can receive physical and manual training, in addition to scholastic instruction. The plans include a series of cottage dormitories, each accommodating ten boys, with executive buildings, in which will be located a school, gymnasium, playrooms and workshops. No site for the institution has yet been selected, but the Committee has the option of several desirable properties, and it will probably be located somewhere in Westchester County.

SUIT AGAINST A WATER COMPANY. — In the suit of the State of New York in the relation of Dr. Edward F. Brush, ex-Mayor of Mount Vernon, Westchester County, against the New York Suburban Water Supply Company, to compel the latter to furnish an abundant supply of pure water to the inhabitants of that city at a reasonable price, which was tried in the Supreme Court at White Plains, on December 19th, the jury rendered a verdict to the effect that the company must supply the two million gallons required per day at the rate of 15 cents per hundred cubic feet, instead of 22 cents, now demanded, and that the water must be pure and wholesome. It had been charged that the reservoirs of the company were in such bad condition as to render the water unfit for use.

AN AGED IMMIGRANT.—Mrs. Ida Schiebs, a Russian Jewess, died on December 22d, at the reputed age of one hundred years. She is said to have been the most aged immigrant ever received at the port of New York, as it is only six years since she came to this country.

Miscellany.

INDUSTRIAL SCHOOL FOR CRIPPLED AND DEFORMED CHILDREN.

DURING six years of active life this school has accomplished most gratifying results in giving instruction to crippled children, who through their infirmities are unable to compete with normal children.

The school now has 44 pupils, with a waiting list of over 50. The children are brought from their homes in the morning and returned in the afternoon. They are given instruction in the common school studies and provided with a substantial dinner. The industrial teaching is in printing, sewing, clay modelling, cane chair seating and the Sloyd system. The school has outgrown its present quarters on Newbury Street, and it is hoped that land and a suitable building may be procured for the proper continuance of the work. The physical condition of the children, which is often a matter of the greatest consequence, is looked after by physicians skilled in orthopedic surgery. The enterprise is certainly one deserving of the warmest support.

SAMUEL KETCH, M.D.

IMMEDIATELY after the stated meeting of the Orthopedic Section of the New York Academy of Medicine, held on December 15, 1899, had been called to order, it was on motion adjourned out of respect to the memory of Dr. Samuel Ketch, and a committee was appointed by the Chair to express the sentiments of the section. The committee reported as follows:

The Orthopedic Section of the New York Academy of Medicine desires to express its profound grief at the sudden death of Dr. Samuel Ketch, one of its most useful and honored members.

An original member of the Orthopedic Society, since merged in the Orthopedic Section of the Academy, he served as its secretary in 1889, and as its chairman in 1891, presented several valuable original contributions, and was at all times prominent in everything pertaining to its best interests and progress.

Identified with the practice of orthopedic surgery for nearly twenty-five years, and in every way devoted to the advancement of his chosen work, his life was one of consistent uprightness and honest and successful effort.

(Signed)

HENRY LING TAYLOR,
NEWTON M. SHAFFER,
REGINALD H. SAYRE,
Committee.

THE RIGHT OF THE DEAD TO LIVE.

THERE appears to be a strong impression — perhaps only a space-filling revival of an impression — going the rounds of the newspapers at least, that many people are buried alive. The revival of this ghastly idea from time to time has led to various tests and devices by which the unfortunate result might be averted, but we have found none so original and startling as the following, said to be the invention of Count Michel de Karnice Karnicki, chamberlain of the Tzar of Russia. A demonstration of the apparatus has recently been given at the New York Academy of Medicine by M. Emile Camois, of Paris. We do not vouch for the exact authenticity of the following account, which, however, we have no doubt does, if any, only minor injustice to the truth:

"The apparatus used for the demonstration presented a gruesome spectacle. On the platform rested a coffin, with the front side left out to give a view of the interior. Four stanchions six feet high, corresponding to the depth of a grave, supported a scaffolding, upon which rested the apparatus proper. "La Karnice," as the Russian invention is called, consists of an iron box about two feet square, from the under side of which a four-inch iron tube extends downward and fits into a hole in the coffin near its head. Through this tube extends a small iron rod, extending to within five inches of the chest of the body. The upper end of the bar connects with the mechanism in the box above. On the outside of this box is rigged a large gilt ball on a six-foot lever, which, when the instrument is wound up, is held in a horizontal position by a sort of trigger. The grave is supposed now to have been filled in, leaving the box of machinery and the gilt ball inert on top. No one is supposed to be left in the vicinity except the cemetery keeper or grave digger. Supposing the body suddenly revives, it may either pull or push the ball at the end of the rod, with

the same result. Instantly on top of the supposed grave the gilt ball flies up on its lever with a bang. The lid of the machinery box flies open, and a bell within with a capacity of a dozen alarm clocks begins to ring energetically, and fresh air is admitted. The interior of the box displays a lamp which it was explained could be left lighted at night. The automatic opening of the box releases a reflector which adjusts itself near the lamp. This reflector, it was explained, would throw the cheerful light of the lamp down through the four-inch tube into the coffin, so lighting up the interior that 'one could read a newspaper with ease.' The lecturer referred to this last feature several times as being particularly comforting. The interior of the machinery box further contains a small double-barreled arrangement whereby simultaneously with the agitation of the gilt ball, the ringing of the bell, and the lighting of the lamp, a small skyrocket is set off, and a lighted bomb thrown a short distance away, there to explode. By this time it was but fair to assume, the lecturer said, that the cemetery keeper if not the entire neighborhood would be apprised of the fact that something was wrong."

We quite agree with the last statement, but a renewal of life gained at such a sacrifice of the ordinary amenities supposed to go with burial will hardly commend itself to the more seriously minded portion of the community. The Count should simplify his machine.

THE NATURAL RIGHT TO A NATURAL DEATH.

Our leading article in this issue is the President's address delivered at the recent annual meeting of the American Social Science Association, which is here published, by permission, in advance of its publication in the *Journal of Social Science*. This address has been very extensively criticised both by the lay press and by the medical journals of the country, but it must be remembered that these criticisms were based upon newspaper reports of the meeting and that the complete address is now published for the first time. The address is an interesting, scholarly and exhaustive discussion of the subject of which it treats, and theoretically we can agree with the main conclusion reached by its distinguished author, namely, that to prolong life by a few hours or even days, at the cost of much pain and agony, and against the desire of the sufferer who is dying of a disease from which recovery is impossible, is cruelty rather than mercy. Practically, however, in view of the limitations of our present knowledge, we must condemn the views expressed by Judge Baldwin as being dangerous and unscientific. He admits that "If a recovery is possible all means of recovery should be exhausted." Who is to decide whether or no recovery be possible in a certain case? I doubt if there is a physician of large experience who cannot point to living patients whose recovery from a certain illness he has declared and believed impossible, but who are to-day active, useful and happy citizens. Even in those dreadful cases of malignant disease to which he refers, modern surgery is daily recording new achievements where months and even years of comfortable life have been given to the victim who had been previously condemned to a speedy death. "Never give up your patient while he breathes" was the advice of a distinguished surgeon in an address to students, and it is sound advice. When medicine becomes an exact science, when the physician can predict unerringly the outcome of disease, and can declare with absolute certainty (life is certainly too precious to be satisfied with "all reasonable possibilities") that death is approaching, then perhaps it will be right for him to "bow before the awful will" and to be content with soothing the last moments of him "who is simply lingering on the brink of a kindly grave." If, however, there is even a remote possibility of snatching the sufferer from that grave and restoring him to life, it seems to us that the duty of the physician is clear. To all of this we are sure Judge Baldwin will give his hearty assent; but we believe that he has erred in attributing to medicine an infallibility which she does not possess. In the case of the infant, with a congenital defect which surgery can remedy only at the expense of making its life a "daily and hopeless misery," the responsibility does not rest with the surgeon, as a rule, but with the parents, and we have yet to meet the mother who would not demand the life of her new-born babe, no matter what the circumstances, or the surgeon who would refuse it to her.

The suggestion that when we save the life of an individual who but for our interference would die, we may be depriving him of the opportunity to fill a specially appointed place in another life, which if not occupied at the appointed time will be taken by some one else, is certainly original, and smacks of an orthodoxy which is quite beyond our comprehension. Were we convinced (which, thank God! we are not) that such is the case, we should look with conscience stricken eyes upon sundry poor devils whom we, with the best of motives, have snatched from impending death and thereby compelled to occupy, in the future, seats much more remote from the Throne than those which they might have occupied had we left them to their fate! — *St. Paul Medical Journal*, December, 1899.

Correspondence.

THE INVIOLABILITY OF PROFESSIONAL CONFIDENCE.

Boston, December 25, 1899.

Mr. Editor: — On page 17 of the *Sunday Herald* of December 24, 1899, appears a full account of the case of the foundress of the system known as "Christian Science," furnished by the physician who attended her in 1866, and now published, it is said, at the suggestion of a prominent clergyman. Her condition is minutely described and the remedies used are given in detail.

Such a scandalous betrayal of confidence ought not to be passed unnoticed by a profession which rightly regards with detestation any breach of common honor and honesty. The writer has certainly no sympathy with the delusion of which Mrs Eddy is the chief apostle. Her opinion of him would probably not be one of approval. But this has nothing to do with the matter. Her relations with her former medical adviser were strictly private, and not to be exploited by him at a later date and without her consent. Secrecy on the part of the physician is the understood privilege of every patient, no matter what his character or views.

Every member of our profession must be shocked at conduct like that here condemned, and has a right to raise his voice in solemn protest.

M. D.

METEOROLOGICAL RECORD

For the week ending December 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...10	30.44	32	42	21	73	71	72	N.W.	S.	6	7	F.	O.	
M...11	30.25	51	60	42	81	80	80	S.W.	S.	12	13	O.	O.	
T...12	29.91	60	66	53	68	83	76	S.	S.W.	18	14	O.	C.	.10
W...13	29.96	50	58	41	84	48	66	S.W.	W.	12	10	C.	C.	
T...14	30.31	38	42	33	57	58	58	W.	S.E.	11	8	C.	F.	
F...15	30.60	41	55	27	91	57	74	S.	W.	6	13	R.	C.	.88
S...16	30.60	26	33	19	71	46	58	N.W.	N.	12	7	C.	C.	

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 16, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1222	289	8.28	25.01	.72	.81	3.60
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	—	—	—	—	—	—	—
Baltimore	506,389	181	45	13.20	11.55	3.85	1.65	7.70
Cincinnati	405,000	100	—	8.00	5.00	4.01	3.00	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	87	12	17.25	13.80	—	10.35	4.60
Washington	277,000	114	28	14.08	12.32	—	1.40	3.52
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	71	24	12.68	15.51	1.41	2.82	4.23
Nashville	87,754	29	9	3.45	17.25	3.45	—	—
Charleston	65,165	29	9	17.25	20.70	6.90	3.45	—
Worcester	111,732	28	9	7.14	7.14	—	—	7.14
Fall River	103,142	30	12	10.00	10.00	6.66	—	—
Cambridge	92,820	26	10	7.70	19.25	—	—	7.70
Lowell	90,114	33	4	9.09	18.18	—	—	6.06
New Bedford	70,511	18	6	16.66	16.66	5.55	5.55	5.55
Lynn	68,218	22	6	24.90	4.15	—	4.15	12.45
Somerville	64,394	16	4	25.00	18.75	—	—	12.50
Lawrence	59,072	16	10	18.75	12.50	—	—	18.75
Springfield	58,266	21	4	28.56	9.52	9.52	9.52	4.76
Holyoke	44,510	11	4	9.09	9.09	—	—	9.09
Brockton	38,759	9	3	—	—	—	—	—
Salem	37,723	18	7	—	11.11	—	—	—
Malden	36,421	5	3	40.00	—	—	20.00	—
Chelsea	34,235	14	4	7.14	—	—	—	7.14
Haverhill	32,651	10	1	10.00	20.00	—	—	10.00
Gloucester	31,426	8	3	—	—	—	—	—
Fitchburg	30,523	8	3	—	25.00	—	—	—
Newton	30,461	9	—	11.11	11.11	—	—	—
Taunton	28,527	8	3	25.00	12.50	12.50	—	—
Everett	28,102	—	—	—	—	—	—	—
Quincy	24,578	8	—	—	12.50	—	—	—
Pittsfield	23,421	—	—	—	—	—	—	—
Waltham	22,791	9	—	11.11	22.22	—	—	11.11
North Adams	21,583	4	4	—	—	—	—	—
Chicopee	18,316	2	1	—	—	—	—	—
Medford	17,190	14	4	28.56	21.42	7.14	7.14	14.28
Newburyport	15,636	4	—	—	25.00	—	—	—
Melrose	14,721	2	—	—	—	—	—	—

Deaths reported 2,195; under five years of age 602; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 217, acute lung diseases 406, consumption 262, diphtheria and croup 89, typhoid fever 38, diarrheal diseases 30, measles 17, whooping-cough 15, scarlet fever 13, cerebro-spinal meningitis 11, erysipelas 4.

From measles New York 13, Washington, 2, Pittsburg and Springfield 1 each. From whooping-cough New York 7, Washington, Providence and Charleston 2 each, Pittsburg and Lynn 1 each. From scarlet fever New York 11, Cincinnati, and Washington 1 each. From cerebro-spinal meningitis New York 4, Somerville 2, Washington, Lowell, Lynn, Malden and Newton 1 each. From erysipelas New York, Washington, Providence and Taunton 1 each.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 23, 1899.

W. M. WHEELER, passed assistant surgeon, detached from duty at the Naval Hospital, New York, and ordered to the "Vermont."

H. A. DUNN, assistant surgeon, detached from Port Royal Naval Station on reporting of relief, and ordered home and to wait orders.

M. S. ELLIOTT, assistant surgeon, detached from the "Vermont," on reporting of relief, and ordered to duty at the Port Royal Naval Station.

E. DAVIS, assistant surgeon, ordered to duty at the Naval Hospital, New York.

W. L. BELL, assistant surgeon, detached from the "Independence," December 31st, and ordered to the Island of Guam on the "Scindia."

H. T. PERCY, surgeon, ordered to the Norfolk Navy Yard, January 4th.

H. E. AMES, surgeon, detached from the Norfolk Navy Yard, on reporting of relief, and directed to proceed home and to be ready for orders to sea service.

CHANGES BY CABLE FROM THE ASIATIC STATION.

R. C. PERSONS, medical inspector, detached from the "Baltimore" and ordered to the "Brooklyn."

G. E. H. HARMAN, medical inspector, detached from the "Brooklyn" and ordered to the "Baltimore."

O. D. NORTON, surgeon, detached from the "Solace" and ordered to the "Monadnock."

C. H. T. LOWNDES, passed assistant surgeon, detached from the "Princeton" and ordered home.

J. STOUGHTON, passed assistant surgeon, detached from the "Monadnock" and ordered to the "Bennington" *via* the "Solace."

C. D. LANGHORNE, assistant surgeon, detached from the "Monterey" and ordered to the "Princeton."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 21, 1899.

WASDIN, EUGENE, surgeon. Granted leave of absence for one month and fifteen days, to take effect on or about January 15, 1900. December 20, 1899.

WHITE, H., surgeon. Detailed under the provisions of the Act of Congress, approved March 2, 1899, as a member of a commission to investigate the origin and prevalence of leprosy in the United States. December 15, 1899.

VAUGHAN, G. T., passed assistant surgeon. Detailed under the provisions of the Act of Congress, approved March 2, 1899, as a member of a commission to investigate the origin and prevalence of leprosy in the United States. December 15, 1899.

STONER, J. B., passed assistant surgeon. Granted leave of absence for seven days from December 23d. December 16, 1899.

ROSENAU, M. J., passed assistant surgeon. Detailed under the provisions of the Act of Congress, approved March 2, 1899, as a member of a commission to investigate the origin and prevalence of leprosy in the United States. December 15, 1899.

TROTTER, F. E., assistant surgeon. To proceed to Tortugas Quarantine and report to medical officer in command for temporary duty. December 16, 1899.

KEYES, J. M., acting assistant surgeon. Granted leave of absence for thirty days from December 16th. December 15, 1899.

TUTTLE, JAY, acting assistant surgeon. Granted leave of absence for thirty days, to take effect on or about January 2, 1900. December 20, 1899.

COMFORT, N. C., hospital steward. Relieved from duty on steamer "Wapiti," and directed to proceed to Louisville, Ky., and report to medical officer in command for duty. December 19, 1899.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, January 3, 1900, at 8.15 o'clock.

Papers: "The Practical Value of a Blood Count in Surgical Cases," by Dr. J. C. Hubbard.

Dr. H. A. Lothrop will report "A Case of Gunshot Wound of the Abdomen, with Multiple Wounds of the Intestine."

F. G. BALCH, M.D., *Secretary*, 279 Clarendon St.